THE

COMMAND AND GENERAL STAFF SCHOOL

# MILITARY REVIEW

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THE COMMAND AND GENERAL STAFF SCHOOL

OFFICE OF THE DIRECTOR

SPECIAL CLASS AND EXTENSION COURSES

June 1, 1939.

TO: Officers of the Special Class and Extension Courses.

As a result of continuing improvements in means of communication and transportation, the world on which we live, from the aspect of the accessibility of any point on its surface to another, is rapidly shrinking. One already noticeable effect of the shrinking process has been the intensified extent to which happenings in one country are immediately reflected in the internal life of other countries.

In recent years, through causes which it is unnecessary to specify, international relationships and diplomacy have changed; faith in the sanctity of treaties has become impaired, and there has been a widely spread reversion to concepts implying the use of force as an instrument of national policy.

However these facts may be deprecated, it seems clear that information about the methods, means, and appliances in use or under development by the various world powers for the application of military force has become of pronounced interest, not only to military men but also to every citizen with a sense of responsibility which rises above merely personal or local matters and events.

The Command and General Staff School Military Review provides comprehensive information upon military matters as does no other publication with which I am familiar. For this reason I think it should receive wide circulation in the United States.

Cary I. Crockett.

CARY I. CROCKETT,
Colonel, Infantry,
Director.

Volume XIX
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*THE*

COMMAND AND GENERAL STAFF SCHOOL

# MILITARY REVIEW

*QUARTERLY REVIEW OF MILITARY LITERATURE*

LIEUTENANT COLONEL E. M. BENITEZ, C. A. C., *Editor*

## June, 1939

*Second Quarter*

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# Books

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Views on Air Defense—*By Lieutenant General N. N. Golovine*

The Elements of Imperial Defense—*By A. G. Boycott*

A History of Mexico—*By Henry B. Parkes*

The Philippines. Our Problem of Forty Years—*By Major William H. Anderson*

Latin America: A Brief History—*By F. A. Kirkpatrick*

American Labor—*By Herbert Harris*

Jungle Patrol—*By Vic Hurley*

Supply in Modern War—*By Colonel G. C. Shaw*

Mahan: The Life and Work of Captain Alfred Thayer Mahan, U. S. N.—*By Captain W. D. Puleston*

A History of the United States Marine Corps—*By Lieut. Colonel Clyde H. Metcalf, U. S. M. C.*

Mein Kampf—*By Adolph Hitler*

Fremont, Pathmarker of the West—*By Allan Nevins*

Inside Europe—*By John Gunther*

Memoirs of the Peace Conference—*By David Lloyd George*

Europe in Retreat—*By Vera M. Dean*

Anthony Eden: A Biography—*By Alan Campbell Johnson*

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# Mission

The object of this publication is a systematic review of current military literature, through cataloging articles of professional value, in selected military and naval periodicals, in the domestic and foreign field.

Articles from foreign periodicals are treated by translations of titles and digests of contents; material of particular importance is covered more extensively in a section of "Foreign Military Digests."

A "Library Bulletin" Section lists books, recently accessioned, which are of particular significance.

This *Review* is published as a guide to modern military tendencies and to inspire vigorous thoughts on the subjects treated.

The opinions expressed by authors are not necessarily official.

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# Acknowledgment

The editor desires to express his thanks and appreciation to the many persons who have valuably assisted in the preparation of material for this issue. The work of contributors has been done in addition to their other duties and on their own time. We are very grateful to the following officers for their generous donations.

MAJOR G. J. BRAUN: *Militär Wochenblatt* (1-22 July 1938).

COLONEL L. H. BRERETON: *Revue de l'Armée de l'Air* (September, October 1938)

LIEUTENANT J. DASHER: *Krasnaya Zvyezda* (27 January-8 March 1939)

LIEUT. COLONEL P. R. DAVISON: The Rumanian Campaign of 1916

CAPTAIN H. N. HARTNESS: *Die Kraftfahrkampftruppe* (October, November, December 1938)

LIEUTENANT F. HENRIKSEN: *Wehrtechnische Monatshefte* (August, September 1938)

LIEUT. COLONEL L. W. HILLIARD: *Revue Militaire Suisse* (November, December 1938)

LIEUT. COLONEL G. R. MEYER: Doctrines of the Defensive; Delaying Action.

MAJOR T. R. PHILLIPS: *Revue Militaire Générale* (October 1938)

LIEUTENANT J. W. RUDOLPH: Book Reviews.

MAJOR L. K. TRUSCOTT, JR.: *Revue de Cavalerie* (November-December 1938—January-February 1939).

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# The Cover

Field Artillery Battery advancing to support the attack in maneuvers of the 1st Cavalry Division, Fort Bliss, Texas.

Photograph by Wide World Photo, New York.

FIELD MARSHAL VON MACKENSEN (RIGHT) WITH CROWN PRINCE BORIS OF BULGARIA INSPECTING A BULGARIAN REGIMENT

# The Rumanian Campaign of 1916

BY LIEUT. COLONEL PAUL R. DAVISON, *Cavalry*

*" 'Tis one and the same Nature that rolls on her course, and whoever has sufficiently considered the present state of things might certainly conclude as to both the future and the past."—Montaigne*

Unquestionably, before and after the ultimatums which precipitated the Great World War of 1914-1918 flew thick and fast, Rumania was aware that should she remain neutral there would be no cut in the harvest for her at the eventual Peace Table. Therefore, with grave doubts shadowing her analysis, she strove for two years to correctly estimate the situation and arrive at a forecast as to which group of nations would be successful. Naturally, that group would be the one with whom Rumania would cast her lot.

King Carol, the Teutonic king of the throne, was definite in his choice. The King's antecedents, long German training, and the strong friendship with the rulers of the Central Powers, all combined to hold his sympathies on the Teutonic side of the conflict. The Rumanian government, however, took a less prejudiced view. The feelings of the king on one hand and the government and the army on the other, called for a decision. Therefore, on 4 August, 1914, the king called a special advisory council, to which ministers and leaders of the Opposition Party were invited. The result of the vote was a majority in favor of neutrality, and the army, when the question was submitted to it, gave the same decision.

Prior to 1914 the European political situation held Rumania in a peculiar strangle hold. The masses were indifferent and the Rumanian peasant was ignorant of the questions at issue. Germany and Austria had built up economic Rumania and since the early eighties had held a firm

grip upon her trade. They had systematically secured control of her important industries, railroads, oil fields, forests and finances. The natural trade channels ran westward to Austria and Germany, where her raw materials were converted into manufactured articles which, in turn, found a ready market in Rumania. The Central Powers had grown to be her logical allies in trade and, moreover, an understanding had long existed between the three nations, binding them closely together. There existed a party, however, with strong leanings toward France, based upon traditional friendship and a feeling for that country and for Italy of blood relationship, which served to counterbalance the pro-German sentiment of the King and his court. For Russia, there was a feeling of distrust on all sides, arising from the seizure of Bessarabia from Rumania after the Russo-Turkish War, and from the fact that Rumania realized she lay directly in the path of Russian ambitions on the Straits.

*Wide World Photo.*

KING CAROL REVIEWING HIS TROOPS

The death of King Carol, in October 1914, completely changed the complexion of things. The new king did not have the decided German tendencies of his father, and his queen, an English princess, threw her strong influences into the scale in favor of the Allies. Rumania was not immediately won over, but her ideas of neutrality wavered and from then on she took count of what each side had to offer, and carefully weighed one against the other, looking for an opportunity to make the best bargain. Historian Buchan's view of the political situation after Carol's death was: "Carol's successor, Ferdinand, had married the granddaughter of Queen Victoria. The new King had not the German leanings of his predecessor and could consider his country's interests with an undivided mind, while the queen made no secret of her sympathies with the Allied cause. For the better part of two years, with the eyes of the world upon her, Rumania suspended her judgment, swayed, now hither, now thither, by the turn of events."

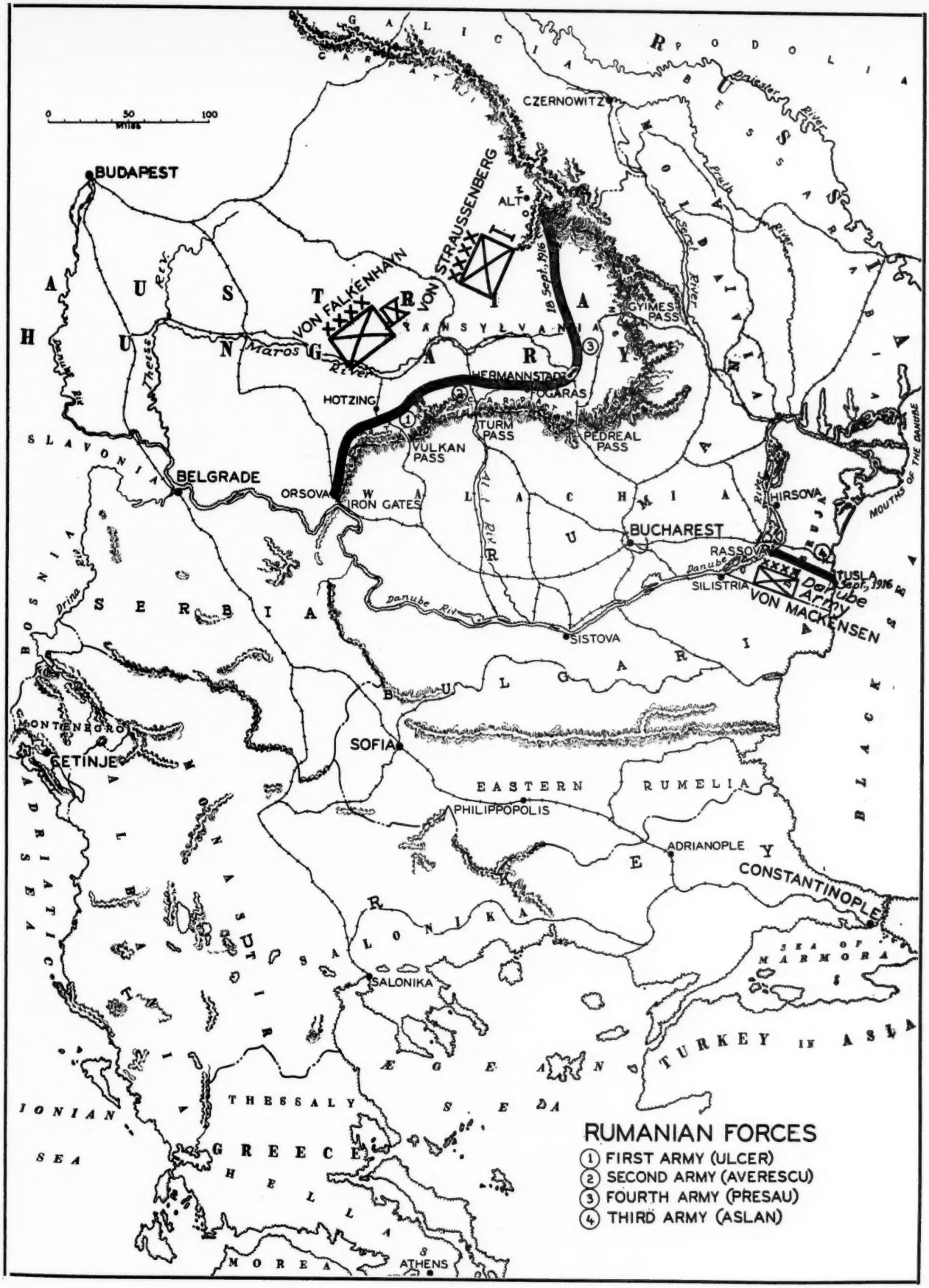
As the war progressed, Rumania became more and more valuable to the Central Powers. From a strategic standpoint, as a neutral or ally, she stood between Russia and the Oriental Railroad, the very life vein of Germany's eastern Allies. In addition, she guarded Constantinople against Russian aggression from the east. Of great importance, too, a matter which became especially apparent as the Allied war of attrition made itself felt to the Central Powers, was the wealth of raw materials, notably grain and oil produced by Rumania, which supplied to a large extent the deficiencies of the Teutonic Allies. Rumania's pre-war exportation of grain amounted to a huge figure. The great Rumanian oil fields located in Old Rumania were then and still are the only big source of natural oil supply in Europe west of Soviet Russia. This oil field still retains its importance, for many experts believe that even today Germany's production of coal and oil is insufficient for her needs in a major war of any duration.

In the early days of the war, Rumania fattened on the competitive buying, by both the Allies and the Teutons, of her large resources of raw materials. In time, this became a menace to her undisturbed peace and prosperity, due to the efforts of both sides to monopolize the market, and Rumania found herself confronted with threats based on the desire to eliminate competition and to secure her participation in the war. She gradually felt herself being forced openly to take sides and she had to decide on which side her interests would best be served. Rumania officially joined the Entente on 27 August 1916.

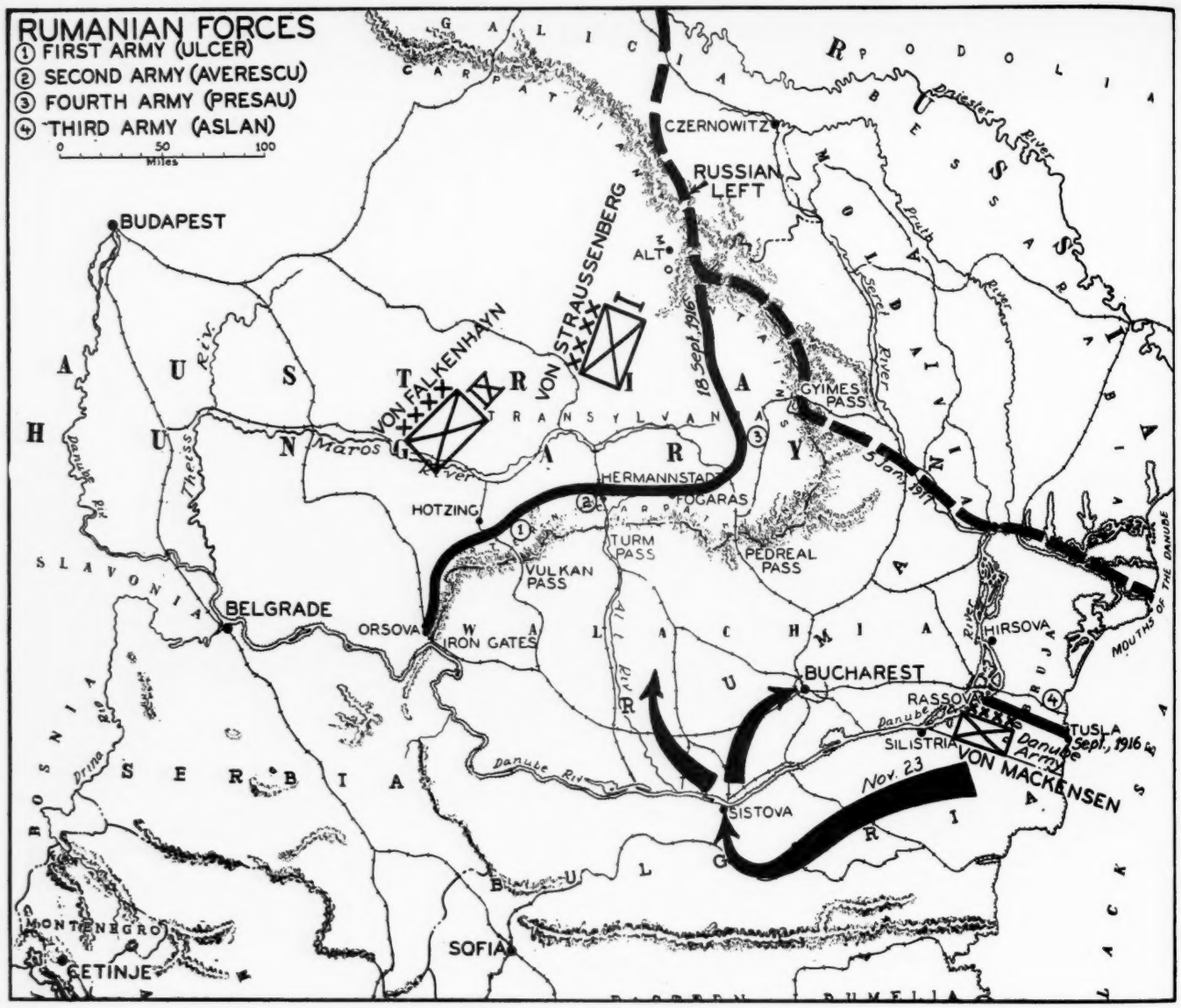
In July 1916 the German High Command estimated that as soon as the time was opportune, Rumania would join the Allied Powers. To meet this expected enemy, Field Marshal von Mackensen was designated as commander-in-chief of the new front and told to make the preliminary plans and to carry out the necessary reconnaissance. He moved into Bulgaria and there assembled such Bulgarian, Turkish, Austrian, Hungarian and German troops as could be spared from other fronts. There in Bulgaria Mackensen awaited developments.

The necessary troops not being immediately available to fight Rumania, the German Foreign Office prolonged the negotiations with Rumania as long as possible. In August, representatives of Germany, Austria, Bulgaria and Turkey determined upon the plan of campaign and set aside the required quotas of troops for the purpose.

The geographical position of Rumania, as well as the military situation at the time when hostilities were commenced against the Central Powers, severely limited the plans of action open to the Rumanian staff, and in fact reduced them to two—first, an offensive to the south from Dobruja, or second, operations to the west into Transylvania. The first plan had to recommend it the hope of effecting a junction with General Sarrail's forces at Salonika, and so of crushing Bulgaria, but it was rejected as entirely too hazardous in view of the French general's apparent reluctance to advance from his base. The other alternative was far more attractive, but on political and military grounds. Transylvania was the Rumanian Alsace-Lorraine, where the invader would be certain of finding popular sympathy on his side—an asset which he would certainly not possess in any invasion of Bulgaria—while the Rumanian flanks would be protected by the Russians in Galicia and by Wallachia itself; these advantages, it was hoped, would more than counterbalance the fact that the Transylvanian railway system favored the enemy. It was accordingly decided to make the offensive to the west. For this purpose three armies, each consisting of about four divisions, were formed, and on the night of 27-28




THE RUMANIAN CAMPAIGN—GENERAL SITUATION SEPT. 1916




RUMANIAN CAMPAIGN—SITUATION TO 5 JANUARY 1917

August they began their advance in a general northwesterly direction into Transylvania. Three divisions were detailed to hold the line of the Danube, and an equal number were left to guard the Dobruja, whither the Russians had promised to send one cavalry and two infantry divisions.

To oppose this advance the Central Powers had at first but five weak Austrian divisions scattered along the Rumanian frontier. From the first it was evident that it was a race against time. If the Austro-Germans could deal a sufficiently heavy blow at the Rumanian columns while they were still toiling through the mountains of Transylvania, the latter could only escape disaster with the greatest of difficulty, but, if once the invader possessed himself of the railways and began to debouch into the Hungarian plain, the position of the Central Powers would be dangerous in the extreme. From the beginning, however, fortune favored the Central Powers. The Austrians, it is true, did little to delay the advance of the invader beyond blowing up the roads and bridges, but the natural obstacles proved far greater than had been expected. As the Rumanian columns penetrated deeply into the enemy's country they became separated and lost connection with one another, until at last their only lateral communications lay over the mountains in Wallachia nearly a hundred miles to the rear. Furthermore, the unbalanced size of the Rumanian divisions and the lack of efficient officers began to make themselves felt, so that the advance became sluggish at the very moment when time was of the utmost importance. When the Austro-German counterattack was launched in the middle of September, the Rumanian offensive was almost at a standstill. King Ferdinand's armies were scattered along the two-hundred-mile front on the general line: Orsova—Hermannstadt—Fogaras—Alt (where it joined the Russian left). An imposing extent of territory had been occupied, but, separated as the columns were from each other, the military position was very weak.

The Austro-German plan of campaign was a simple one, for it was merely to effect a diversion away from the main theater and then to crumple up the Rumanian Armies with all the forces available. Accordingly, while the forces

for this latter purpose, five German and two Austrian divisions, were being concentrated behind the river Maros, Field Marshal von Mackensen diverted the Rumanian attention to the Dobruja. With a composite command of Bulgarians, Germans, Austrians and Turks, he stormed the Tutraken bridgehead on the 5th of September, and put three Rumanian divisions out of action, while four days later Silistria was surrendered to him; with his flank thus secure he began an offensive into Rumania that reached the line: Rasova—Tusla. Here Mackensen came into contact with strong Russian forces and his advance was checked; he had failed to cut the railway from Cernavoda to Constanza, but he had accomplished his purpose. Von Mackensen's attack had not only closed to the Russians the road into Bulgaria and thence to Salonika or Constantinople, but, what was of even greater immediate importance, he had diverted the Rumanian reserves from the main theater of war in Transylvania. Thus, when Field Marshal von Falkenhayn arrived on 18 September to take command of the Austro-German armies he found the situation more favorable to the Central Powers than he had hoped it would be.

General von Falkenhayn's first move was to contain the Rumanian columns with as few troops as possible in Transylvania, while he attacked the enemy's left flank with every man he could collect. The main blow fell upon the column which was advancing upon Hotzing. Overwhelmed by the weight of artillery which was brought to bear upon them, while they were unable to communicate with the armies on their right, the Rumanians fell back through the Vulkan Pass; there they rallied, and for a time were even able to make some headway against their opponents.

At the Vulkan Pass, the Germans from Hotzing, under General von Staabs, after occupying it, were counterattacked by General Culcer (First Army) and driven some distance to the north, where they remained till the beginning of October, but this in no way affected the main issue of the campaign, for they were soon compelled to retreat once more in order to conform to the general movement of the other Rumanian forces. This withdrawal naturally exposed the flank of the army which had occupied Hermannstadt, and it, too, had to fall back. Von Falkenhayn now determined to concentrate against the Rumanian center, where the advanced troops had retired, and so bring the campaign to an end by a stroke as spectacular as that which forced the surrender of Marshal Bazaine at Metz. The sturdy resistance of the Rumanians frustrated the German design, and compelled von Falkenhayn to wait for reinforcements. When these arrived the decisive moment had passed, and there was nothing left but to press the Rumanians slowly back in the hope that sooner or later the line would break under the strain.

It was towards the Turm (Red Tower) Pass that General von Falkenhayn directed his principal effort. The right column, number three, of the Rumanian First Army, under General Manolescu, had one division towards Fogaras and the other before Hermannstadt. Only one railway line fed these troops, whereas Falkenhayn had three lines of supply, and, observing the isolated position of these divisions—one opposite Hermannstadt and the other twenty miles to the east, toward Fogaras, but too far from that place to obtain any effective support from the garrison—the commander of the German Ninth Army planned to cut them both from the Turm Pass and their only line of supply.

Any estimate of the situation will be sufficient to enable the reader to appreciate the dangerous positions of General Manolescu's divisions, one between Talmech and Fogaras, and the other before Hermannstadt—drawing both their supplies from the Alt Valley railway—if attacked by superior forces. The importance of Talmech, the junction of the lines from Fogaras and Hermannstadt, will also be manifest, as well as the vital necessity (to the Rumanians) of keeping open the Turm Pass.

General Kraft von Delmensingen, Conqueror of the Turm Pass

Falkenhayn's plan was to occupy Manolescu with a frontal attack from Hermannstadt, push a force between his right division and Talmech, and at the same time occupy the Turm Pass. His principal difficulty was the mountainous nature of the country, rendering the essential rapid movement far from easy; but to meet this difficulty he had a *corps d'élite*, specially withdrawn from the Italian front—the Alpine Division—composed of Bavarians and Prussians, and commanded by the Bavarian General, Kraft von Delmensingen. Its strength was nine battalions of infantry, supported by artillery consisting of: six field, six mountain, and one heavy batteries. The men's personal equipment included an iron-shod alpenstock.

This division, starting on 22 September, and marching for five days over hills 6,000 feet to 7,000 feet high, reached the Turm Pass on the 26th, having had only one skirmish by way of opposition during the march. The left German column, also very mobile, reached its appointed position on the same day, the 26th, and Manolescu was cut from his communications. The operation was a cleverly planned and well executed example of mountain warfare on a big scale. Manolescu's situation was desperate; but he escaped complete destruction by abandoning any attempt to recover his communications by the Turm Pass and, marching southeastwards over the Fogaras mountains, re-entered Rumanian territory with the loss of only 3,000 unwounded prisoners and thirteen guns, thus turning the pass. Falkenhayn had judged such a maneuver impossible with no good roads, and, having moved a force on Fogaras,

had counted on the destruction or capture of the whole Rumanian First Army.

Leaving the Alpine Division on the Turm Pass, and General von Staab's force masking the Vulkan, Falkenhayn now (30 September) directed the mass of his army against the troops of the Rumanian Second and left wing of the Fourth Armies on the Transylvanian plateau.

During the second week in November the Rumanians at last gave way, and after a rapid retreat through the Wallachian plain, made a final stand on the line of the Alt River.

While the fighting had been taking place in the Rumanian western theater, von Mackensen had renewed his attacks in the Dobruja, and had succeeded at last in seizing the Cernavoda—Constanza railway, which he had been unable to reach in his first offensive. Mackensen's success constituted a serious threat for the Rumanians, since a further advance would have the effect of cutting off Moldavia from Wallachia, and thus depriving the main armies of Rumania of any possibility of obtaining Russian help. The danger was recognized by the Allies, and the Russian troops, that were being hurried to the defense of the line of the Alt were diverted to stop von Mackensen's advance; this service they certainly performed, but in so doing, they played into the German commander's hands. Von Mackensen left but a fraction of his forces in the Dobruja, as soon as he knew that his opponents were fully committed in that quarter, while he struck the decisive blow elsewhere. On 23 November he forced the crossing of the Danube at Sistova, and thereby turned the left flank of the Rumanian positions on the Alt River. This move brought the campaign to a close, for, in spite of a prompt Rumanian counterstroke, and of a desperate resistance, the Austro-German advance continued unchecked, and on 6 December, Bucharest itself fell. The Russians in the Dobruja were obliged to conform to the general retrograde movement. By the end of the year the Allied line was the Seret—Black Sea*.

Nearly a quarter of a century has passed since the Rumanian affair of 1916. During the 23 years there has been time for historians and military analysts to deduce and assign reasons that go hand in hand with strategy and tactics for the success of the Central Powers against Rumania feebly assisted by her Allies. Factors which combined to favor the Central Powers are:

The adoption of a sound plan in anticipation of the campaign.

Superior leadership, manifested by prompt seizure of the initiative, correct estimate of the situation, and resolute adherance to the original plans of operation.

The concentration of superior forces at the decisive time and place, and the utilization of all available means in the decisive battle.

Superiority in armament, equipment and munitions.

Superiority in combat efficiency.

Superiority in the air.

Control of the Danube by Austrian Monitors.

Conversely the non-existence on the side of Rumanian of the factors favoring the Central Powers was a definite disadvantage. The most obvious causes of Rumania's failure are attributed to:

Frequent changes of plans
Irresolute execution of the original plan
Lack of unity of command
Hesitant movements
Dispersion of forces
Defective leadership
Inferiority in the air
Deficiencies in armament, equipment and munitions.

Leadership, probably, had more decisive effect upon the outcome of the campaign than any other single factor. The Central Powers were commanded by superior warriors, cautious, careful and well schooled in strategy, tactics as well as correct staff procedure. The two principal German leaders, Mackensen and Falkenhayn, were better qualified to fight their forces in every respect than were the Rumanian commanders. In spite of her greater number of available soldiers Rumania suffered complete defeat. The entire blame cannot be laid to Rumania's inferior armament and air power. The Rumanian commanders were four mutually jealous, suspicious and uncooperative generals—Culcer, Averescu, Aslan and Presan—who were leaders in name only.

It is interesting to line up the opposing commands in order to consider a few comments concerning them. The arrangement in each group is not by seniority, importance, or degree of ability.

| CENTRAL POWERS | RUMANIA AND ALLIES |
|---|---|
| Archduke Charles (Austrian) (Political commander to lessen friction between Falkenhayn and Straussenburg.) | Zayonchovski (Russian) (Galicia and Bukowina) |
| Straussenburg (Austrian) | Culcer (Rumanian) 1st Army<br>Averescu (Rumanian) 2d Army and the southern front<br>Aslan (Rumanian) 3d Army<br>Presan (Rumanian) 4th Army |
| Falkenhayn (German) | The Rumanian Crown which attempted to coordinate the four armies with very little success |
| Mackensen (German) | Sarrail (French) (Commanding forces in Salonika which hoped to hold Mackensen's attention so that he could not operate against Rumania.) |

The Archduke Charles may be figured as a political commander with no mission other than to minimize friction between Falkenhayn and Straussenburg, in which he was not entirely successful. Zayonchovski, the Russian, commanding in Galicia and Bukowina, barely entered the campaign. Sarrail, the French commander in Salonika, need not be considered. In the original plan, Sarrail was to occupy von Mackensen's attention so that Rumania would be free of the Dobruja and the Danube. This scheme did not work out.

*In 1916 both Turkey and Bulgaria were allies of the Central Powers and thus it was possible for Germany to attack Rumania from the South, while the main force was pressing from the east side of Transylvania. Falkenhayn forced the Vulkan Pass, and the other passes were rendered untenable by Mackensen's drive against the defender's rears.

The four Rumanian generals, Presan, Culcer, Averescu and Aslan, were relatively unimportant commanders in the World War. Each had an army and fought it almost independently of the others, and with lack of instructions from the Crown. Averescu was a smoother politician, but, if possible, a poorer general than the other three. He had the largest army. Therefore, in this Rumanian affair of 1916, both sides included, there are only two leaders worth studying, and these in order of merit, Field Marshal von Mackensen and General von Falkenhayn.

*Wide World Photo.*

RUMANIAN INFANTRY ON THE MARCH, 1938

Since *leadership* played such an important part in the campaign it is considered fitting that a thumbnail sketch of the two officers selected as outstanding be considered.

### FIELD MARSHAL VON MACKENSEN

Von Mackensen won a place equal to that of von Hindenberg in the German Hall of Fame even before Lemberg fell and the Russians fled in complete rout, and without any advantage on his part save that gained by his own efforts. He won his way from obscurity to prominence without help, except such recognition as was the just reward of his ability. He began his career in the Franco-Prussian War as plain "Mackensen," a one-year volunteer, the son of a country squire in Saxony. During that war he climbed to distinction by being an ultra-aggressive individual and a most successful scout. After the war he re-entered the professional military service, and since then gradually made his way to the top of the military ladder.

The recklessness of his youth gave way to an imperturbable firmness and calm. He is called "The Sphinxlike," because of his aversion to unnecessary conversation. He never discussed a plan until it was distinctly outlined in every detail in his own mind. Then he was willing to listen to comment and criticism, and quick to make such changes as the opinions of his subordinates revealed to him as necessary.

Although von Mackensen is one of the few German officers who did not graduate from the War College, he became one of the great strategists in the German Army. He was a master of organization and concentration. He is quiet and unassuming. He was 65 years old at the outbreak of the World War. He lives today. Although well past 80, he is active, alert and possessed of all his faculties.

### GENERAL VON FALKENHAYN

General von Falkenhayn was 53 years old at the outbreak of the World War. He entered the army through cadet schools and an ordinary line regiment. He was singled out for distinction when he passed out from the Kriegsakademie in 1890, third in his class. He went to the Far East as instructor to Chinese troops. Instead of impressing German military ideas on China, he allowed the Chinese doctrine of war to gain a hold on himself.

After serving on the staff in the Boxer troubles and commanding a battalion in Germany, he was suddenly promoted to command a Guard regiment. To his military qualifications and the tact of a politician, he added social prestige by this command. He rose to Minister of War just prior to the World War.

Aloof, reserved, notoriously ambitious, he was not the man to inspire affection in his juniors or trust in his superiors. Tall, slim, with a particularly youthful face, in which were a pair of very sharp and clever, but sarcastic eyes, with a striking contrast of thick grey hair.

He was an adherent of the strategy of attrition. He carried this ruling idea into his tactics, and produced a new form of attack, that by methodical stages, each with a limited objective. He believed that a breakthrough in mass is unnecessary.

GENERAL VON FALKENHAYN (LEFT) INSPECTING POSITIONS IN THE CARPATHIANS

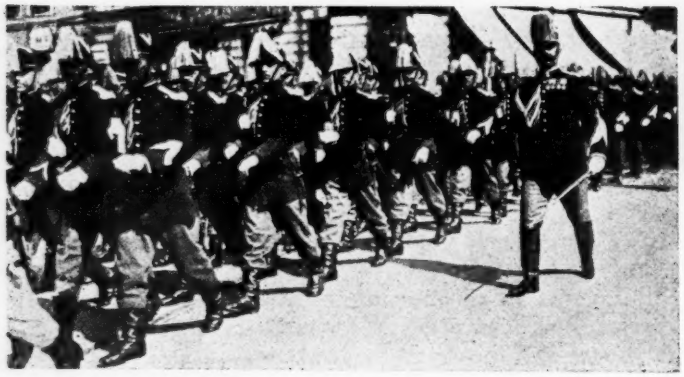
He was not aggressive except in a limited manner. His operations were carefully planned and executed with extreme caution. He seemed to underestimate the power of the enemy as evidenced by the battle of Verdun where the French did not bleed to death by the attrition tactics of the Germans. And, again, when he thought the Russians were incapable of further offensive action and the Austrian front collapsed under the pressure of Brusilov's attack, Austria suffering a loss of 200,000 prisoners.

As a result of Verdun and Brusilov's push, Falkenhayn was removed as Chief of the German General Staff. Too

valuable for oblivion, he was allowed to choose command of the Ninth Army for the campaign against Rumania.

In this fight, Falkenhayn was able to exercise his adopted methods. He made himself personally familiar with the situation, then planned the first limited attack, to find the weak point, with the greatest detail. He used his superior air force, fire power and mobility to the very best advantage. The maneuver of his cavalry and Alpine troops was masterfully carried out. His next limited objective was to force the Vulkan Pass, which he did. Next, he maneuvered south until he connected with Mackensen on the Alt River.

Superior fire power of heavy artillery, and being opposed by a poorly led, large enemy, allowed Falkenhayn to succeed with his own tactics rather than a display of master strategy on his part.



RUMANIAN INFANTRY, 1916

Falkenhayn was an excellent staff officer when sittir in the highest places, but not a commander to be considered for inclusion in the ranks of Great Captains. He possessed nearly every gift of nature except the intuition of a great commander. His decisions were half measures. He was an uncompromising realist.

OPPOSING TROOPS

| CENTRAL POWERS | RUMANIA AND ALLIES |
|---|---|
| August 29 | |
| 9 Infantry Divisions<br>1 Cavalry Division | 23 Infantry Divisions<br>3 Cavalry Divisions |
| September 18 | |
| 17 Infantry Divisions<br>4 Cavalry Divisions | 25 Infantry Divisions<br>3 Cavalry Divisions |
| October 15 | |
| 20 Infantry Divisions<br>4 Cavalry Divisions | 27 Infantry Divisions<br>3½ Cavalry Divisions |
| November 16 | |
| 28½ Infantry Divisions<br>5 Cavalry Divisions | 30 Infantry Divisions<br>4 Cavalry Divisions |

About 18 September a further comparison is as follows:

| CENTRAL POWERS | | RUMANIA AND ALLIES | |
|---|---|---|---|
| Infantry Divisions | 17 | 25 | |
| Cavalry Divisions | 4 | 3 | |
| Men | 325,000 | 603,000 | (2) |
| Machine guns | 3,000 | 500 | |
| Division Artillery | 935 | 1,400 | (1) |
| Heavy Artillery | Ample | None | |

(1) A large part were obsolete and there was a great shortage of divisional field artillery ammunition.

(2) Two types of rifles of different calibers confused the ammunition supply.

### GERMAN ALLIES

There were immediately available to the Central Powers 280,000 men (70,000 in Transylvania, 30,000 in Banant, 180,000 Bulgarians and Turks in the south).

The troops were superior to the Rumanians in everything but numbers. Officers and men were experienced veterans. All commanders and staffs were used to working with large units. Organizations, staffs and equipment were better. Corps and heavy artillery was plentiful. Air service, balloons and zeppelins were provided. The intelligence service was well organized.

RUMANIAN FIELD ARTILLERY, 1916

### RUMANIAN ARMY

Initially Rumania had 575,000 men in her army. Eventually this force was expanded to the impressive number of 1,080,000. Infantry divisions varied from 20,000 to 25,000. She was without gas equipment, trench mortars, antiaircraft guns and searchlights. Practically no air force. About 500 machine guns. She had six weeks munition supply and a promise of 300 tons daily from the Allies, only a part of which materialized.

### PHYSICAL SET-UP FOR COMMAND

In the German-Austrian forces, and those under von Mackensen in Bulgaria, the staff set-up was typically German. It consisted of three general groups: the commanders' personal staff, the general staff, and the special, administrative or technical staff. The organization, in general, was very much the same as the staffs of the American Army today. Both Falkenhayn and Mackensen used their staffs to the maximum. They controlled everything through correct use of staff officers.

In Rumania, however, the staffs of the four armies and the general reserves were not well organized nor were they well used. They were used more as large personal staffs. They did not have definite type functions assigned and they were inclined to meddle and to assume command functions. The staffs of the Rumanian Army were materially inferior to those of the Central Powers. The use of these staffs was not designated to assist but to change the order of things, so it seems.

### TYPES OF FORCES—METHODS OF FIGHTING

The Germanic forces in Transylvania were general purpose divisions, and an Alpine Brigade. They were well trained in all methods of fighting, with the Alpine Brigade especially trained for mountain warfare. The troops of the German Ninth Army, which was assembled for the purpose

of defeating the Rumanians, were also well trained, all-purpose divisions.

The Rumanian units while not really good at any type of warfare, were, perhaps, best at defensive tactics in mountainous country.

### Tactics

The Central Powers' troops, both Mackensen's and Falkenhayn's, were employed on the principle of mass, successfully defeating the enemy in detail. Reconnaissance in force, on broad fronts, was used to determine weak points. Secondary holding attacks with great fire support were used to employ maneuver by the flank and turning movements. The air forces were used for observation, reconnaissance, and to assist flank movements by bombing enemy positions.

The Rumanian forces did little more than to employ straight frontal attacks. They swarmed over the mountains and pushed into the Transylvanian plain until stopped by the ever increasing enemy. When the pressure became too strong they withdrew and defended the line of the mountains, a natural, strong position, until they were maneuvered out into the Wallachian plain where they were defeated by the flexible, mobile tactics of the Central Powers.

### Basic Principle Decisions

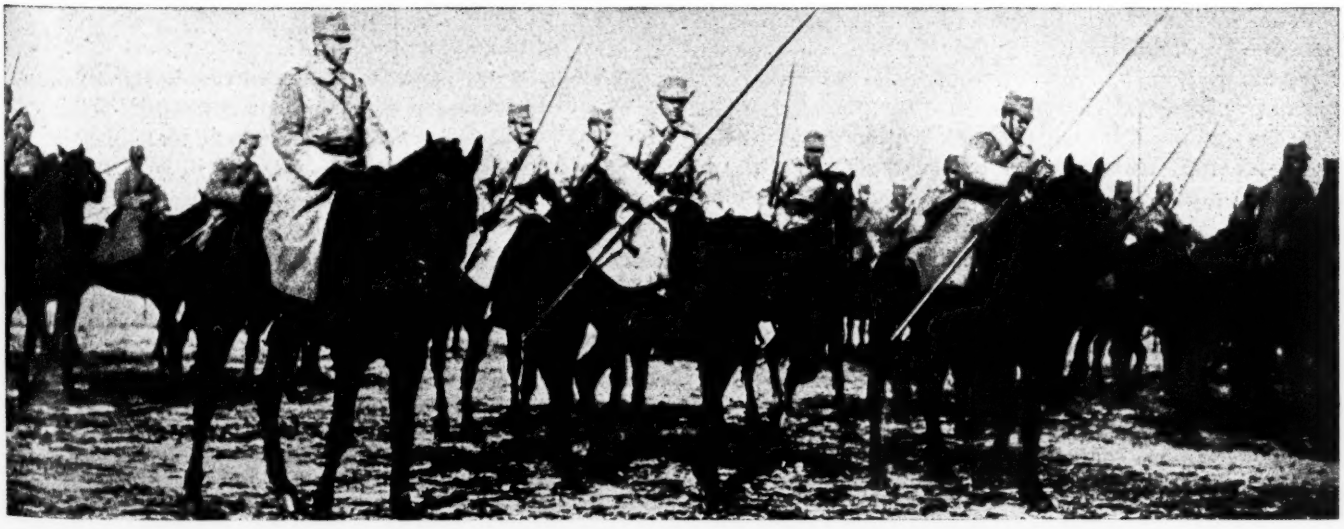
Rumania's decision to cross the mountains and occupy Transylvania, practically neglecting the Dobruja and the Danubian border is open to criticism. This decision was made with the consent of England, France and Russia. It was felt that the campaign to occupy the lost Transylvanian territory would make the war popular with the Rumanian people. At the time, the Allies were to supply 300 tons of munitions daily. The Russians were to furnish combat troops. The French Sarrail was to hold the attention of Mackensen by the offensive north and east of Salonika. All this support failed after Rumania had committed her offensive to that planned. Rumania did not have the armament, which includes the fire power, to hold the mountain passes when forced to fall back thereon.

The basic decisions of the Central Powers were practically dictated by the situation. They were required to cross the mountain barrier into Rumania and fight for a decision in that country. There remained only to decide at what pass or passes the main effort should be applied. Careful reconnaissance, staff planning, and an attack on the whole front were used to develop the weak point. It turned out that the Vulkan Pass was selected as the weak one and results showed that the deduction was correct. Von Mackensen was directed to cease his operations in the Dobruja and to cross the Danube in the vicinity of Sistova to connect with Falkenhayn along the Alt River.

The fact that there was little or no connection between the passes in the mountains held by the Rumanians, allowed the Central Powers to mass at the point desired and use the movement with their superior fire power to advantage. Fortifications did not influence the decisions as it was only necessary for Mackensen to capture one on the Danube while Falkenhayn forced another at the Vulkan Pass. Both of these operations were successful without great difficulties.

**"I have but one lamp by which my feet are guided, and that is the lamp of experience. I know of no better way of judging the future but by the past."**

*—Patrick Henry.*



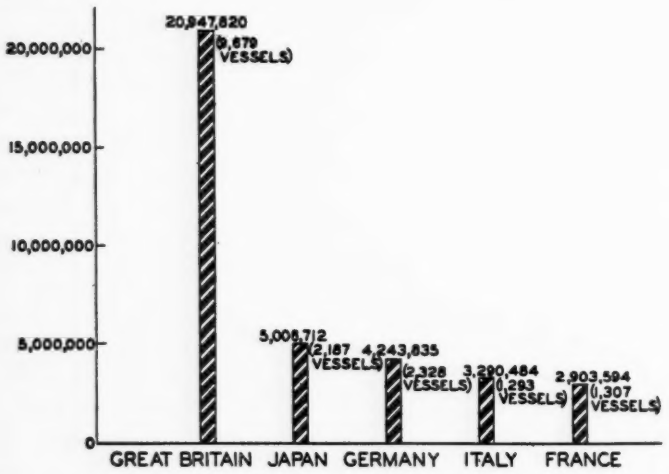
Rumanian Cavalry, 1916

# MILITARY NEWS around the WORLD

BY
MAJOR E. M. BENITEZ, C.A.C.

## MERCHANT MARINES

The World War showed that in time of war a nation's merchant marine becomes an important auxiliary of the navy. In a national emergency, merchant vessels are used as auxiliary cruisers, commerce raiders, transports and as supply ships.




MERCHANT MARINES OF PRINCIPAL POWERS (UNITED STATES EXCEPTED)
GROSS TONNAGES FROM "LLOYD'S REGISTER," 1938

The Northern Patrol, composed of twenty-four armed ocean liners, relieved the British Grand Fleet of its functions of patrolling the northern trade routes and beginning with December 1914 effectively maintained the blockade of Germany day and night throughout the duration of the war.

The Tenth Cruiser Squadron, composed of Britain's best merchantmen, was given the mission of transporting and supplying the British Expeditionary Force. As early as August 1914, nearly one-half of the fast boats of the Cunard Line and of the Royal Mail Line were taken over as auxiliary cruisers and transports. By the end of the month all the ships of the Canadian Pacific Railway Company's trans-Pacific fleet had been requisitioned by the British Government and by 1916 more than 1500 large ships had been pressed into the British Government service.

The renovated commercial vessels *Moewe*, *Adler* and *Wolf*—converted by the Germans into auxiliary cruisers—destroyed a total of 272,000 tons of merchantmen, disabled many ships and caused considerable disturbance in shipping. The *Wolf*—largest of these three vessels—was only 5,809 tons.

When the World War broke out in 1914, American foreign commerce was badly crippled because it depended greatly upon foreign shipping. German ships sought refuge in neutral ports, England's need for supplies from overseas rapidly increased, while German submarines still further depleted the world's available tonnage. Thus the World War taught a lesson, namely, that if a nation expects to share in the world's trade, an efficient merchant marine is an essential requirement.

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## ARGENTINA

With a total trade value of $1,240,035,000 in 1937, the Republic of Argentina experienced a banner commercial year. Imports increased 29.8 per cent and exports 37.9 per cent over the preceding year.

Great Britain ranked first in Argentine purchases and in total exports, followed by the United States and Germany which ranked second and third, respectively.

The exchange rate of the Argentine peso varied from 31 to 33 cents to the dollar.

(*Latin American Foreign Trade, F.T.S.* No. 71, 1939)

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## BELGIUM

Under a law passed 27 December 1938, the Minister of National Defense has been authorized to spend £ 4,285,000 on active and passive defense. These funds will be utilized for the following purposes:

A considerable increase in the strength of fighter aircraft in the Military Air Service.

Passive air defense measures, including the provision of air raid shelters.

The formation of a new force of antiaircraft artillery and searchlights. This force will be distinct from, and not in addition to, the regular antiaircraft artillery of the "Defense Terrestre contre Aeronefs" (D.T.C.A.), which is an integral part of the army.

The role of the new force will be the defense of towns and factories, and its personnel will be recruited locally on lines similar to those which governed the old "Garde Civique" of pre-war days and will be required to attend a prescribed number of drills each year like the Territorial Army in England.

(*Journal of the Royal United Service Institution*, May 1939)

## BOLIVIA

The first Inter-American Conference on Indian Life will be held at La Paz in August 1939.

(*Bulletin of the Pan American Union*, April 1939)

## BRAZIL

On 19 January President Varges issued two decrees establishing in Brazil a five-year Special Plan for Public Works and National Defense, the total cost of which is placed at approximately $150,000,000. Although drafted in general terms the decrees point out the necessity of "promoting the establishment of the so-called basic industries, such as iron and steel, and the execution of public works, as well as providing national defense with the elements necessary for order in and the security of the country.

(*Bulletin of the Pan American Union*, April 1939)

## CHILE

The Third Pan American Highway Congress was held at Santiago, Chile, 11-19 January 1939.

The report rendered said, in part:

"The Pan American Highway proceeds from the Mexican—United States border to Lima, Santiago, La Paz, Buenos Aires and Rio de Janeiro, touching all intervening capitals, an estimated distance of 14,500 miles throughout the entire length. Of this distance, 3,000 miles are of all weather highway and 8,900 miles more may be traversed in dry weather, while 2,600 miles represent trails inaccessible to automotive traffic."

(*Bulletin of the Pan American Union*, April 1939)

## CHINA

Negotiations between the Chinese government and the British Air Ministry have laid the basis for an air service between Burma and China operated on a reciprocal basis, according to an announcement of the Society of British Aircraft Constructors, Ltd. Four-engined Armstrong Whitworth Atlanta monoplanes probably will fly the route. The Chinese terminal will be Yunnan.

(*New York Tribune*, March 19, 1939)

## COLOMBIA

As part of the festivities celebrating the independence of Cartagena, President Santos took part in the ceremonies incidental to the opening of the new water works system. The water is taken from the Canal del Dique at Gambote, about 22 miles from Cartagena, and is pumped to Cerro de la Popa, where the filtration and distribution tanks are situated.

(*Bulletin of the Pan American Union*, April 1939)

## COSTA RICA

In 1937 the value of the total foreign trade was recorded officially at $23,391,000, an increase of 40 per cent over the preceding year. This increase of almost seven millions was effected to a great degree by the augmented trade of Germany and the United States, which accounted for over one-half the increase.

The United States ranked first in 1937, in Costa Rica imports and exports. Germany ranked second in imports and third in exports. Great Britain ranked second in exports.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## CUBA

In 1937, the total foreign commerce of Cuba experienced a gain of 22.3 per cent over the preceding year. The total world trade of the Republic reached a value of $315,643,000. The United States ranked first in both imports and exports among the six principal commercial countries. Great Britain was second and Germany third.

The Cuban peso equals approximately one United States current dollar.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## DOMINICAN REPUBLIC

A new law issued by the Dominican Congress and approved by the President of the Republic on 21 December 1938 provides that at least 70 per cent of the number of employers and laborers of any employer engaged in commercial, industrial or agricultural pursuits in the Dominican Republic must be Dominican citizens and the latter shall receive at least 70 per cent of the total payroll of the employer.

The law establishes certain exceptions. Executives, technicians, if the government is willing to certify that there are no unemployed Dominicans qualified to do their work; foreigners married to Dominican women, if they have resided in the country for more than three years; and foreigners who have Dominican children, if they have lived in the country for more than five years, are not to be included in computing the above named percentage.

(*Bulletin of the Pan American Union*, April 1939)

## ECUADOR

In 1937, the aggregate foreign commerce of the republic reached a value of $26,908,000, a gain of 10.5 per cent as compared to 1936. The United States ranked first both in imports and exports, with Germany and Great Britain second and third, respectively.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## ESTONIA

London, April 18.—Exchange Telegraph (British news agency) reported from Tallinn today that the Estonian government had increased the period of compulsory military service from one to two years.

## FRANCE

The Schneider arms factory has built a new antitank gun that has the following characteristics:

Caliber, 47-mm
Initial M.V. 2600 f.s.
Vertical sector: 5° to 15°
Horizontal sector: 45°

The projectile can penetrate armor of 30-mm thickness at a range of 1200 yards.

(*Militar-Wochenblatt*, No. 24, 1938)

The "Journal Officiel" has announced important increases in the strength of the French Army. The number of commissioned officers will be raised from 30,638 to 31,060 not including general officers, officers engaged on munitions productions and gendarmerie officers. The N.C.O's. cadre will be increased at once by 2,500. Junior officers of cavalry are to be invited to transfer to the artillery, where their services are urgently required.

Two new general officers have been appointed to the Supreme War Council in place of two officers who are retiring. The new officers are: General Bourret, Commander of the Military Region of Paris, and General Giraud, Military Governor of Metz. General Gamelin's period of active service is to be extended to the age of 70—he is now 67—and he will retain his post as Chief of the General Staff of National Defense. He will be assisted by General Georges, Assistant Chief of the General Staff, who will be Commander-in-Chief of the army in case of war.

The commands of the frontier districts are to be reorganized, and special measures are to be taken to reinforce the garrisons of the fortified region of Metz, Chalons-sur-Marne, Nancy and Strasbourg.

The period of military service is to be increased from 24 months to 27 months. The strength of the Colonial Army has recently been doubled.

(*Journal of the Royal United Service Institution*, May 1939)

Navy:

On 27 March 1939 the President signed a decree increasing the personnel in the navy.

The naval budget for 1939 amounts to 2,674,172,367 francs, which is an increase of 22 per cent on that quoted for 1938. No additional new construction is contemplated or provided for in this budget. The completion of new construction already sanctioned will absorb the whole of the present financial resources.

The naval air service is to be developed in line with the rest of the fleet, and will be supplied during 1939 with new and modern aircraft.

(*Journal of the Royal United Service Institution*, May 1939)

The National Defense General Staff of which General Gamelin is Chief, has almost supreme authority over the army, air force and navy. The objective is complete coordination of the defense services.

Of the French Army today, about 450,000 men are in France, the others in the colonies guarding such points as Tunisia, Algiers, Corsica, Morocco and French Somaliland. Besides, there are 45,000 gendarmes and mobile guards, now on civil duty, all of whom could make excellent noncommissioned officers. The entire army includes besides fortress troops, 28 infantry divisions, 3 mechanized divisions and 3 cavalry divisions.

(*Foreign Press*)

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## GERMANY

The area of pre-war Germany was 208,780 square miles which the Versailles Treaty reduced to 181,500 square miles. By her military occupation of the Rhineland, Nazi Germany added to her military control 10,423 square miles.

Austria Hungary before the World War was a country of 261,259 square miles; Austria after the war had 32,369 square miles. The Reich absorbed Austria on March 13, 1938. By the Munich Agreement, the Sudetenland with an area of approximately 11,000 square miles was absorbed by Germany. The area of Bohemia—Moravia occupied by Germany 15 March 1939 is 18,158 square miles. The area of Slovakia now dominated by Germany is 4,600 square miles.

The area Carpatho-Ukraine awarded to Hungary is 4,206 square miles.

Germany has annexed Czechoslovakia and Memel and has become a nation of 86,000,000 and in addition captured the greater part of the Czech gold reserve of $91,000,000 plus whatever may be extracted from foreign credits, which has been calculated at from $150,000,000 to $200,000,000.

In addition to gold and foreign exchange, the German conquest has yielded important military and strategic gains. 2,000 airplanes are now incorporated in the Reich air force. Military equipment (tanks, guns, munitions and the like) sufficient for an army of 2,000,000 have likewise been obtained, and the Czech munitions industry at Pilzen and other places, which had been developed by the Czechs on a scale worthy of a great power.

Strategically, Germany has gained both defensively and offensively. Defensively, the principal gains are the obliteration of the Czech Army and material shortening of the total length of Germany's frontiers. Both of these factors increase the security of Germany if war should come in the west.

Offensively, Germany gains materially with respect to both Poland and Hungary. And ultimately with regard to Rumania as well. The German-Polish frontier is lengthened to a total of about 1,600 miles in consequence of the German conquest of Slovakia and Moravia. The German-Hungarian frontier is likewise greatly lengthened, wherefore Hungary is exposed to German pressure as never before.

(*Foreign Notes*, March 25, 1939)

A new speed record of 321 m.p.h. for a distance of 621 miles with a payload or bomb load of 4,410 pounds was set up on March 19, 1939 by a German Junkers bomber (two 1,100 h.p. Junkers motor) over a course between Dessau and the Zugspitze mountains in Bavaria.

The new record beat that of 294 m.p.h. set up by the Italians in a Savoia-Marchetti bomber (three 1,000 h.p. motors) on 4 December 1938.

The airplane is a prototype of a new bomber to be produced in series for the German Air Force. It is an all-metal low-wing monoplane, probably the Junkers Ju-88, of which no details have ever been published.

(*The Aeroplane*, March 29, 1939)

On March 17, 1939, the famous Krupp Works, Germany's principal armaments manufacturing center, published its 1937-38 report. The net profits amounted to 21,110,000 marks ($8,444,000), compared with 16,230,000 marks ($6,492,000) in the previous year. A dividend of 6 per cent was declared, a boost of 1 per cent over the 1936-37 period.

General Alexander Loehr was selected 18 March 1939 by Field Marshal Goering to command a new air force for Germany's new eastern domains. The new organization will embrace Austria, Bohemia, Moravia, parts of Sudetenland and Silesia.

On 18 April a German naval squadron consisting of two "pocket-battleships," three cruisers, a flotilla of destroyers and a flotilla of submarines with auxiliary vessels left Germany to carry the customary spring training cruise in the Atlantic. The cruise will last four weeks during which time German warships may visit Cadiz, Algeciras and Malaga in Southern Spain, Ceuta in Spanish Morocco and Tangier.

(*Illustrated London News*, April 29, 1939)

*Navy:*

The latest published details of Germany's naval position show that four years hence her fleet in service will be 420,000 tons. This total is made up of five capital ships, three "pocket" battleships, fourteen cruisers, two aircraft carriers, forty destroyers and torpedo boats and an unspecified number of submarines.

This is far below 35 per cent of what British naval strength is expected to reach by that date.

(*United Services Review*, April 27, 1939)

The German air force, considered probably the most modern in the world, has none of the handicaps of most of the older air corps—chiefly of having on hand a large number of obsolete and obsolescent airplanes.

The Germans have concentrated in building chiefly bombers and single-seat fighters.

There are three kinds of bombers: the Dornier, the Heinkel and the Junkers. All are twin-motored types capable of speeds up to 300 miles per hour, and have approximately the same range—about 1,900 miles with a ton and a half of bomb load. All the engines used are electric ignition motors, not Diesels. The Diesels are not flexible enough and according to the Germans do not develop enough power for their weight to justify them for military use.

The bulk of the smaller ships in the air force are single-seat fighters of either the Heinkel or Messerschmidt designs. They use the same motors found in the bombers.

(*Press*)

The battleship "Tirpitz" was launched at Wilhelmshaven in the presence of Hitler on 1 April 1939. This is a sister ship of the 35,000-ton "Bismarck" which was launched last February. These ships will have an armament of eight 15-inch guns in two turrets, twelve 6-inch and a number of antiaircraft guns.

(*Journal of the Royal United Service Institution*, May 1939)

On 18 December 1938 the aircraft "Graf-Zeppelin" was launched at Kiel in the presence of Chancellor Hitler, Admiral Raeder, Marshal Goering and other high German officials: The characteristics of this ship are as follows:

| | |
|---|---|
| Length: | 820 feet. |
| Width: | 88 feet. |
| Tonnage: | 19,000. |
| Speed: | 32 knots. |
| Armament: | 16—150-mm guns. |
| | 10—105-mm antiaircraft guns. |
| | 22—37-mm A.A machine guns. |

(*Revue de l'Armee de l'Air*, January-February 1939)

According to reports from Germany the Czech fortifications in the Sudetenland were well designed, located and built; but it is claimed that they could not have held out because of air invasion.

The Germans had counted on bringing in at the start a division of air infantry which would have cooperated in the attack of fortifications and would have insured their capture. It was planned to have 700 pursuit planes accompany the air invasion to protect it.

It is also reported that the plans of the Czech General Staff were defective in regard to the use of reserves—most of them having been committed to various fronts and not kept mobile.

(*Foreign Press*)

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## GREAT BRITAIN

According to the *Times*, the three new British motorized divisions of the Territorial Army that will be organized will have less mobility than at first contemplated.

A matter still pending decision is whether to use three-ton trucks or 1½-ton trucks. While the latter are easier to handle, the former can carry a larger number of men.

The motorcycle battalion of each division will be provided with sidecars for three men.

A new unit has been organized, a motorized company of field police, provided with radio. This unit handles the traffic over the route selected for movement.

The three new divisions are the London Division, the 50th of Northumberland and the 55th of West Lancashire. Two of the division commanders are regular army officers and the other belongs to the Territorial Army.

(*La France Militaire*, March 1, 1939)

The 1939-1940 army appropriation exceeds that of the navy. The three appropriations of the national budget are as follows:

| | |
|---|---|
| *Navy* | —£149,399,000 |
| *Army* | —£161,133,000 |
| *Aviation* | —£205,951,000 |
| Total | £516,483,000 |

The strength of the 1938-1939 regular army will consist of 185,700 men, an increase of 15,700 over last year. The reserve consists of 139,000 men as against 122,000 in 1937. If to these figures are added the strength of the Territorial Army, the British Army can be said to have a force of 622,000 men.

The Regular Army has undergone changes. All cavalry regiments in Great Britain, but two, have been motorized. A motor-mechanics school has been established at Aldershot for training of auto-mechanics.

The Territorial Army has undergone great changes. It has been reorganized in order to create two cavalry brigades, one mobile division, three motorized divisions and nine infantry divisions of the same pattern as those of the regular army. Antiaircraft units have been created and the antiaircraft force of the Territorial Army has been organized into a corps of five divisions with headquarters in London, Nottingham, Edinburg, Chester and Reading, respectively.

Light antiaircraft units have been organized for local defense; these units consist of men who will continue in their civil duties, but who will man the guns defending the factories in which they are employed.

The Indian Army also has undergone reforms. Four of its cavalry regiments have been motorized. All these regiments are of native troops, there is no British cavalry in India.

The British troops in India consist of 46,942 men or a reduction of 10,000 men who will be used to reinforce the metropolitan army. The infantry in India has been reduced by 7,000 men, and four battalions will return to England. These changes seem to indicate that the battalion itself will have a different organization.

The extent of rearmament in Great Britain may be seen from the amounts allotted to the Army and Navy alone in the budget during the last four years, which in round numbers are as follows:

1936—£ 50 million
1937—£139 million
1938—£212 million
1939—£310 million

(*La France Militaire*, March 10, 1939)

The 1940-1941 appropriation has allotted:

| | |
|---|---|
| *Civil Department* | —£446 million |
| *National Defence* | —£580 million |
| *Debt Interest* | —£230 million |

Out of the national defense appropriation the navy has been allotted £149,399,000, an increase of £23,000,000 over last year's budget. The new 1939 program contemplates the following construction:

2—Capital ships
1—Aircraft carrier
4—Cruisers
2—Destroyer flotillas
4—Submarines
20—Fast Escort vessels
2—Escort vessels, normal type
10—Minesweepers
1—Mine planter
1—Depot ship for motor torpedo-boats
1—Monitor
1—Hospital ship
6—Torpedo boats
2—Boom Defense vessels
1—Fleet Target Service Tug
Several miscellaneous small craft.

The Admiralty has adopted the policy of having an aircraft carrier for each first line battleship.

The main duty of the escort ships will be the protection of transatlantic liners.

(*La France Militaire*, March 17, 1939)

Production has begun at Grantham of the Oerlikon-Hispano HS-404 25-mm cannon for the equipment of the Royal Air Force. Existing single seater fighters may be adapted and altered to carry cannon as well as machine guns. Newer types of airplanes are being designed to be armed with cannon.

(*The Aeroplane*, April 5, 1939)

On 20 April Mr. Edward Leslie Burgin who had been Minister of Transport since 1937, in succession to Mr. Hore

Belisha, was appointed Minister of Supply. For the time being, until a bill is framed, the scope of the Ministry of Supply will be confined to the following matters:

"It will deal with the problems of army supply, considerably expanded as they have been by recent decisions to increase the strength of the army.

"The Ministry will take over the responsibility for certain stores of general use which the War Office already supplies to other Government departments, including certain civil defense requirements.

"The new Ministry will also take over responsibility for the acquisition and maintenance of the reserves of essential metals and other raw materials required for the defense programmes.

"The branches to be transferred to the new Ministry will include the branches responsible for research, design, experiment, production and inspection and the Royal Ordnance factories.

The bill will, among other things, include provisions designed to secure priority for government orders.

It is proposed to establish a Ministerial Priority Committee which towards the end of the last war performed the duty of settling questions and priority resulting from the demands from the several services.

(*The Aeroplane*, April 26, 1939)

*Conscription:*

On 26 April the House of Commons approved the government's decision to introduce a limited form of compulsory military service, a project under which about 200,000 conscripts will come up annually for six months' military training.

Never before in peacetime had the British resorted to true conscription to secure men for its defense forces. It was only in February 1916 when 18 months of the World War had wiped out the flower of the volunteer armies that Great Britain fell back on the draft to secure men. Conscription brought 2,100,000 men into the British Army from the time it became operative under the compulsory military service act, 10 February 1916, until the Armistice was signed 11 November 1918.

Under the present projected legislation, conscription is to be in force for three years, a period which can be shortened or lengthened at will.

The emergency expeditionary force announced recently is to consist of 32 divisions—6 regular and 26 territorial. These divisions will be composed partly of ordinary volunteers and partly of men who have done six months' conscript service.

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By the end of the fiscal year 1938, the first-line strength of the Royal Air Force at home had been expanded to 1750 aircraft in accordance with the 1936 programme.

Three new commands have been created:

The *Maintenance Command* which is now responsible for the administration of all storage units and depots at home.

A *Balloon Command* which has charge of the administration and training of the 47 units in different parts of the United Kingdom now comprised in the balloon barrage scheme.

A *Reserve Command* which is responsible for the training of all sections of the Volunteer Reserve—pilots, air crews and ground personnel.

The Overseas Royal Air Force has been increased by three squadrons.

(*Journal of the Royal United Service Institution*, May 1939)

Against modern airplanes antiaircraft guns should have a minimum caliber of 90-mm to 100-mm. The aircraft carrier "Ark Royal" has new guns 115-mm caliber. Evidently the tendency is to increase the caliber and there is already talk of 150-mm caliber. With guns of 100-mm caliber, however, the rate of fire is from 15 to 20 rounds per minute, while the small automatic guns have a rate of fire in excess of 100 rounds per minute.

(*Revue de l'Armee de l'Air*, January-February 1939)

## AIR FORCES OF THE DOMINIONS, 1937

### Australia

General Headquarters: Melbourne.
Pilots' School: Point Cook (Victoria)
There are three air bases: Laverton (Victoria), Richmond (N.S.W.) and Pearce (W.A.)
Number of officers and cadets, regular army: 340
Number of first line planes: 96 to be increased to 198.
Type of planes: Hawker "Demon," and Aero "Anson."

### Canada

Canada has a permanent air force of 195 officers with 118 reserve.

Air forces are stationed as follows:

*Pursuit:* 2 squadrilles at Calgary, 1 at Montreal, 1 at Quebec.
*Liaison with Army:* 1 squadron at Ottawa, 1 at Toronto, 1 at Winnipeg.
*Bombardment:* 1 at Ottawa, 1 at Montreal, 1 at Hamilton, 1 at Regina.
*Hydroplanes:* 1 at Vancouver.
*Reconnaissance (coast):* 1 at Darmouth.
*Liaison with coast artillery:* 1 at Vancouver.
*Torpedo:* 1 at Vancouver.
*All missions:* 2 at Ottawa (transport, essais, cadastre).
*Training center:* Trenton.

### New Zealand

The air force consists of 28 officers with a programme to quintuple this force in order to man 2 squadrons of medium bombardment.

(*Air Annual of the British Empire*, 1938)

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## GREECE

The Greek government has asked the British government to send a number of naval officers to act as instructors and technical advisors. Before the World War Greece had a British Naval Mission.

(*Le Yatch*, 4 February 1939)

### GUATEMALA

The aggregate foreign commerce of the Republic reached a value of $37,038,000 in 1937, a gain of 25.6 per cent over the 1936 figure.

The United States ranked first in imports and exports; Germany was second.

The Guatemalan quetzal is equal in value to one United States current dollar.

(*Latin American Foreign Trade*, No. 71, 1939)

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### ITALY

Precautions against air raids are being extended in Italy.

Blue street lamps for emergency use have been installed in certain centers of Rome.

Newspapers have been publishing advice on how the public should behave in anti-air raid drills and have announced a drop in the price of gas masks.

Gas masks now cost 63.50 lire, or about $3.35. The previous price was not listed.

Employers have been requested to outfit all employees with gas masks by April 1st.

(*Press Reports*)

An official Japanese aviation mission of army officers and technicians is visiting the factories and research centers of Italy's aircraft industry. Special exhibitions of the latest types of fighting planes have been arranged.

(*New York Tribune*, March 19, 1939)

The latest official returns of Italy's naval strength is as follows:

4 battleships (not including two 35,000-ton vessels under construction nor a further two similar craft only just laid down);

22 cruisers, four of them ex-German or Austrian ships completed before 1915;

110 small destroyers, 33 of them of small types completed before the end of the Great War;

82 submarines, all modern, with almost negligible exceptions;

7 escort vesels;

46 minesweepers;

36 motor torpedo-boats.

The great bulk of the Italian Navy is in the Mediterranean; the proportion in the Red Sea or cruising in the Outer Seas is very small.

(*United Services Review*, April 27, 1939)

On 7 April Italian troops were landed at four points on the Albanian coast: Santi Quaranta, Valona, Durazzo and San Giovanni di Medua. Resistance was quickly overcome and in a short time the little Adriatic Kingdom of Albania had been annexed by Italy. King Zog who crossed into Greece with most of his government officials has more recently taken refuge in Turkey.

ITALY ANNEXES THE KINGDOM OF ALBANIA

*Wide World Photo.*

ITALIAN LANDING PARTY BEFORE DURAZZO

### LATVIA

On 24 April 1939, President Ulmanis approved a government decision to extend military service from twelve to eighteen months. He also ordered the establishment of twenty-two months of service in the air force.

## JAPAN

On 31 March, Japan announced that she had assumed jurisdiction over the Spratly Islands, 247 acres of coral reefs, 594 miles south of Hainan Island and claimed by France since 1933. These islands lie half-way between the French base of Saigon and Borneo and are commercially of value for their phosphate deposits. Their strategic value, however, is great.

JAPAN ANNOUNCES JURISDICTION OVER SPRATLY ISLANDS

The Japanese newspaper *Asaki*, gives the official exact position as within a zone extending from Latitude 7 to 12 degrees north and Longitude 111 to 117 degrees east.

Japan justifies the claim under international law by stating that although France annexed the Spratly Group in 1933, she neglected to make effective occupation and, further, that the French Government omitted to give the exact longitude of these islands.

(*Foreign and Domestic Press*)

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## LITHUANIA

The Lithuanian Army consists of three infantry divisions of 3 regiments each, 1 cavalry brigade of 3 squadrons, 1 heavy machine gun squadron and four horse squadrons.

The air force consists of 2 bombardment squadrons, 2 pursuit squadrons and one reconnaissance squadron. Anti-aircraft defense is an integral part of the air force.

The peacetime army consists of 21,000 men, 200 guns, 90 airplanes (20 additional in reserve). In case of war, Lithuania can mobilize an army of 200,000 men.

In addition to the regular army, there is a total of 55,000 (men and women) which in time of war, will assist in antiaircraft defense and furnish police protection.

(*Poslednje Novosti*, No. 6203)

## MEXICO

The value of the total foreign trade of the Republic amounted to $417,955,00 in 1937, or an increase of 21.5 per cent as compared with the corresponding figure for the previous year.

All of the six leading commercial countries—United States, Great Britain, Germany, France, Italy and Japan—participating in import trade in 1937, increased in value. The United States ranked first in both imports and exports, with Great Britain and Germany second and third, respectively.

The exchange rate of the Mexican peso was 27 cents to the dollar.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

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## NETHERLANDS

Each infantry regiment has an accompanying battery of three guns, Boehler type. The piece is served by seven men, has a caliber of 47-mm, a range of 8,000 yards and a rate of fire 20 rounds per gun per minute. Each gun has a caisson which carries 100 rounds of ammunition—80 armor piercing and 20 high explosive.

(*Deutsche Wehr* No. 48, 1939)

On 18 April a bill was introduced in Parliament authorizing the government to extend compulsory military service from eleven months to two years.

The bill provides for six months compulsory service to be passed with any frontier battalion. The object of this measure is to strengthen the border forces.

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## NICARAGUA

President Anastasio Somoza was sworn in March 31, 1939 to serve a new presidential period of eight years. He was formerly Chief or the Nicaragua National Guard.

(*La Prensa*)

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## PANAMA

In 1937 the total foreign trade of Panama reached a value of $30,497,000 a gain of 15.6 per cent over the corresponding figure for 1936. The distribution of foreign trade —six principal countries—was as follows:

| | *Imports* | *Exports* |
|---|---|---|
| United States | 52% | 44.1% |
| Japan | 14.2% | negligible |
| Great Britain | 5.8% | 0.5% |
| Germany | 5.4% | 1.2% |
| France | 3.8% | negligible |
| Italy | 0.7% | negligible |

The value of the balboa is equal to that of the United States current dollar.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## PARAGUAY

By a decree issued on 30 December 1938, the government of Paraguay has made compulsory the teaching of anti-totalitarian doctrines in the primary schools throughout the republic, both national and foreign. The preamble of the decree states that there has been an attempted infiltration of anti-democratic propaganda, of both the extreme left and the extreme right, in the public schools, which is contrary to the traditions and temper of the country.

(*Bulletin of the Pan American Union*, April 1939)

General José Felix Estigarribia was recently elected President of Paraguay on the Liberal Party ticket; his four-year term will begin 15 August.

Hero of the Chaco War, General Estigarribia entered the war in 1932 as a lieutenant-colonel and through a series of victories became commander-in-chief of Paraguay's fighting forces. Paraguayans credit him with doing more than any other person to bring about final settlement of the Chaco dispute by the six-nation Chaco conference at Buenos Aires, Argentine, in July 1938. By that settlement Paraguay was awarded most of the jungle area over which the two nations had fought at intervals for one hundred years.

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## PERU

The law on compulsory cultivation of food crops, which, although in the statute books of Peru since 1919, heretofore has been only partially complied with, was recently strengthened by an executive order. All farmers within the provinces of Lima, Callao, Chancay, Cañete, Ica, Chincha and Pisco, where farms have a cultivated area in excess of 25 acres, must devote a certain percentage of their land to the cultivation of food products of prime necessity.

(*Bulletin of the Pan American Union*, April 1939)

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## POLAND

The Polish Navy consists of 4 destroyers, 3 submarines of 980 tons, and 5 old torpedo boats received from the Germans and built during the World War, and several auxiliary units, mine planters and mine sweepers. Three submarines are now under construction. The fleet base is at Edingen.

*Wide World Photo.*

MOTORIZED UNITS OF POLAND'S ARMY PASS IN REVIEW

The river fleet consists of 8 monitors and 6 gunboats. Its base is at Pinsk.

(*Rivista Maritima*)

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## PORTUGAL

*Army:*

New regulations have gone into effect 1 January 1938. The most important changes in the army organization are as follows:

—decrease of the number of infantry regiments from 21 to 16.
—abolition of the two cyclist battalions.
—creation of an armored group.
—motorization of three machine-gun battalions.
—organization of an "ultra fast" infantry regiment.
—abolition of a certain number of artillery battalions.
—adoption of tractors for the artillery.
—grouping of all horse artillery into a mechanized group.
—creation of a mobile coast defense group.
—organization of three antiaircraft artillery regiments.
—decrease of cavalry regiments from 9 to 7 and creation of a motorized regiment.
—acquisition of pursuit, bombardment and observation airplanes.
—decrease of music bands from 32 to 8.

(*Rassegna di Cultura Militare*, November 1938)

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## RUMANIA

Work on a new naval base at Taschaul, on the coast of the Black Sea, about 12 miles north of Constantza, has been started. The harbor will be made deep enough and large enough for ships of any size.

The destroyers "Regelé Ferdinand" and "Regina Maria" —1,800 tons each— were ordered to Malta last July for modernization.

(*Marine Rundschau*)

In accordance with recent regulations, each infantry regiment will have an antitank company of six guns—some 37-mm and some 53-mm—and a platoon of accompanying weapons of two 75-mm guns, all horse drawn.

The division will have an antitank battalion of from 3 to 4 companies, each company of 6 guns.

(*Militar-Wochenblatt*, No. 30, 1939)

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## RUSSIA

*Army:*

In 1937, the land army was organized into 22 army corps, comprising 77 infantry divisions, of which 51 are active and 26 territorial, and 7 cavalry corps normally made up of 32 divisions, inclusive of 28 inactive.

The armament of the infantry is practically similar to the French units; rifles, machine rifles, machine guns, antitank guns of 37-mm and 45-mm caliber.

The armament of the cavalry is of the same type as that of the infantry.

The artillery is armed with the 76-mm and 107-mm guns and with 122-mm and 153-mm howitzers. The artillery reserve is composed of old and rather slow models.

The modernization program involves the establishment of moto-mechanized units, which at present comprise the following:

3 moto-mechanized corps, each made up of 2 mechanized and 2 motorized brigades;

23 independent brigades composed of mechanized units and tanks;

13 independent tank battalions.

The number of tanks is believed to be about 5,000. They are classified in a number of categories in accordance with their contemplated employment: reconnaissance, destruction, breakthrough and special tanks (trench crossing, flame throwers, smoke-emitting, etc.). In principle, armor has been sacrificed to speed, i.e., weight to mobility. The Russians, like the Germans, grant that speed is the best protection in combat.

The experience of tank attacks in Spain, however, has distinctly disproved that principle.

*The Air Army:*

The air army has been increased from 20 brigades in 1933 to 50 brigades in 1937, with more than 4,000 airplanes at the present time.

The air formations comprise heavy and light bombing aviation, pursuit and transport aviation.

Four air corps of two brigades each have been organized, intended for purely aerial operations.

The new model planes have been tested in Spain and seem to have outclassed the German and Italian machines.

*Transport units and parachutists:* These formations are intended to come into action on the remote rear areas of the adversary by setting down organic units with the mission of destroying sensitive points: railway centers, bridges and factories engaged in war manufactures. They are expected to throw a scare into the regions which think themselves out of reach of the struggle on the front and to act in this way upon the morale of the population.

The operation is effected in two stages: heavy machines let down, by parachute, an infantry echelon which is to occupy a strip of terrain suitable for landing. Then, transport planes unload infantry units with their means of combat.

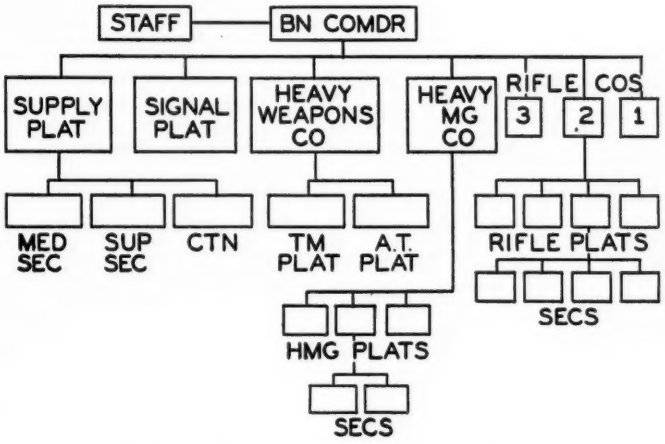
In the course of maneuvers, 1,000 men have been dropped by parachute and 1,500 others unloaded on the ground occupied by the former.

This is a new conception of the employment of aviation, but one which at present does not seem destined to yield the results sought, for such an operation can only be carried out by daylight, and in all countries of Europe the important sensitive points are defended by antiaircraft artillery and special troops. Furthermore, such an aerial operation cannot escape the aviation of the invaded territory, which can enter into action and impede, if not prevent, its development.

*The Navy:*

Scattered over four seas is not capable of combatting any of the navies of Russia's possible adversaries.

The new organization of the infantry battalion comprises a staff, three infantry companies, one heavy machine-gun company and the "special units" of the battalion, i.e., the heavy weapons company, the signal platoon and the supply platoon.




Organization of the Russian Infantry Battalion

The battalion staff consists of: the Chief of Staff; Assistant Chief of Staff for reconnaissance, Assistant Chief of Staff for supply—commands supply platoon; Chief of signal service; enlisted personnel.

The infantry company consists of the company commander, political instructor, first sergeant, assistant first sergeant, company clerk, headquarters section, three rifle platoons and one HMG platoon. The strength of the rifle company is 6 officers and 180 enlisted men. It has the following weapons: 120 rifles, 12 light machine guns, 2 heavy machine guns and 12 rifle grenade projectors.

The headquarters company has a total strength of 5 officers and 110 enlisted men. Strength in weapons is 12 heavy machine guns and 7 rifles.

The heavy machine guns are transported in three different ways:

(a) one-horse cart carries one gun, ammunition and driver;
(b) one 2-horse wagon carries two heavy machine guns, ammunition, equipment (pertaining to guns) and driver;
(c) pack—3 animals per gun, one for the pack gun and the other two for ammunition.

The heavy weapons company consists of the antitank gun and trench mortar platoons. It has two 37-mm or 47-mm antitank guns and two light trench mortars. The squads of antitank guns and trench mortars consist of about 6 men. The company has a total strength of 1 officer and about 27 NCOs and men.

The service platoon embodies all the personnel and vehicles forming the battalion combat train. Included in the battalion combat train are:

Ammunition section
Signal section
Ration section
Medical section
Rolling kitchens.

During combat the ammunition section of the combat train establishes the battalion ammunition distributing point and the company's distributing points.

Rolling kitchens are released to companies as the situation permits.

The medical section of the combat train, during combat, establishes a battalion aid station which has capacity for handling 300 patients daily. This section also provides for the evacuation of casualties from company aid stations.

The fighting power of the Russian infantry battalion as now organized is about 60 per cent of its total strength. This is less than the World War battalion (about 85 per cent), but the fire power of the new battalion is about six or seven times as strong as the pre-war battalions.

(*Sodur*, January 18, 1939, Esthonian Military Journal)

Settlement of the Russo-Japanese fisheries dispute was announced on 4 April with an agreement under which the U.S.S.R withdraws from Japan 27 fishing lots on the grounds that these lots must remain in Russian hands for strategic reasons. The remaining 366 lots have been reauctioned to the Japanese, the rental price being raised 10 per cent.

The new leasing arrangement runs until the end of 1939, although the Japanese claim that they have an agreement under which 264 of the lots will be reauctioned to them annually for a period of five years. The Soviets are silent on this point.

(*Foreign Notes*, April 8, 1939)

Russia has three separate armies:

1. Western Front.
2. Caucasus.
3. Far East (1st Army and 2d Army)
   15 Infantry Divisions
   5 Cavalry Divisions plus 1 brigade
   1 Moto-mechanized Corps plus 1 brigade
   2 Tank brigades
   10 Aviation brigades (1200—2000 planes)

First Army: First Special Red Banner Army
Headquarters at Voroshilovsk—Ussunsk near Vladivostok
General G. M. Fern, Commanding.

Second Army: 2d Special Red Banner Army
Headquarters at Khabarovsk
General I. S. Konyev, Commanding.

Chief of Political Administration: Commissar P. I. Mazepov.

Commander of Soviet Pacific Fleet: Admiral Kuznetsov.

Vice-Commissar of Defense: Leo Mekhilis.

Communist Party Secretary: Sergei Sobolyov.

An air service between China and Soviet Russia was inaugurated 24 March. A machine of the China National Aviation Corporation left Chungking for Hami, Sinkiang Province, 1,000 miles to the northwest. A Soviet machine flew in the opposite direction. However, dozens of Russian warplanes have already reached China by that route.

With the liaison already effected with Air France and to be effected with Imperial Highways, this makes the third backdoor route into China from the outside world.

(*The Aeroplane*, April 5, 1939)

The "Pravda" 15 March has published Marshal Voroshilov's report covering the work of the Commissariat of National Defense during the five-year interval between the 17th and 18th Communist Congress.

According to the Soviet General Staff the German peacetime army consists of 1,150,000 men which will expand to from five and one-half to six times that figure in case of war. Japan has over 1,500,000 men under arms, while Mussolini claims that in case of war, Italy can mobilize 10,000,000 men.

The Red Army has been more than doubled during those five years, having been increased 203 per cent. The special troops in the fortified regions have been considerably increased; but the infantry, in particular, has been made exceedingly strong. The infantry division now consists of 18,000 men and the corps of 60,000.

During those five years, tank and antitank artillery has been greatly reinforced; next comes the antiaircraft artillery which has been increased by 169 per cent; then the heavy artillery with an increase of 85 per cent; howitzer artillery, 80 per cent; horse artillery, 43 per cent; light artillery (less antitank), 34 per cent; medium artillery, 26 per cent. Tank parks have been almost doubled; pursuit aviation as well as bombardment have been strongly reinforced. Soviet bombardment aviation can carry for a single raid, a total of 6,000 tons of bombs.

There are altogether in the army 63 schools for the land army and 32 for aviation.

The salaries of officers have been increased 286 per cent in the last five years.

(*La France Militaire*, March 27, 1939)

Tests have been successfully completed at the Soviet air base at Tushino with the newly constructed "sports" type plane designed by V. Gribovskiy. It will be used for the training of pilots and navigators by the civilian aeronautic societies.

The new ship is a three passenger monoplane of wooden frame with two 100 HP M-11 motors. The navigator's cabin is in the front part of the ship; there are dual controls and flaps for reducing landing speed.

When unloaded the ship weighs 2000 pounds. It is about 23 feet long, wing spread is 35 feet, ceiling 16,500 feet, cruising speed at 1,500 RPM, up to 140 miles per hour.

(*Krasnaya Zvyezda*, 17 February 1939)

"Pravda," Communist party newspaper, gives the Soviet Army strength as follows:

Soviet Army ---------- 1,800,000 men
Air strength ---------- 9,000 planes
(An increase of from 6,000 to 9,000 between '36 and '38)
Machine guns, light ---------- 39,000
Machine guns, heavy ---------- 23,000

Heavy artillery ----------1,600 pieces
Tanks ----------6,000 to 10,000

(*Pravda*, 5 March, 1939)

The following important personnel assignments have been recently made by the Red Army command:

Budenny, S. M., Marshal of the Soviet Union, to be Assistant People's Commissar for Defense, in addition to duties as Commander of Moscow Military District.

Kulik, G. I., Army Commander 1st Rank, to be Assistant People's Commissar for Defense.

Khozin, M. S., Army Commander 2nd Rank, to command the Soviet War Academy at Moscow.

Meretzkov, K. A., Corps Commander, to command the Leningrad Military District.

Shevaldin, T. I., Division Commander, to command the Volga Military District.

Savchenko, G. K., Brigade Commander, to be Chief of Artillery of the Red Army.

(*Krasnaya Zvyezda*)

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## SWEDEN

Sweden, the largest of the Baltic States, has called up one-half of the 1935 class for 15 May, while the other half will be called on 15 June, for military training as a precautionary measure. Altogether, 30,000 men are involved. On 6 May, two classes of antiaircraft artillery and the whole of the 1935 class of coast artillery were called up for a month's training.

Sweden has been at peace for 125 years, although the country was involved in many famous wars prior to 1814. She has recently reaffirmed her neutrality in the event of war.

(*The Foreign Observer*, May 4, 1939)

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## SWITZERLAND

Beginning 1 January 1938, the Swiss Army consists of 9 infantry divisions and 3 independent Alpine brigades.

The division consists of the following units:

—Division headquarters
—3 infantry regiments of 3 battalions each. Each battalion has 3 rifle companies and 1 machine gun company.
—1 motorized company of infantry cannon (9 pieces of 20-mm Bofors)
—1 reconnaissance unit (1 armored platoon, 1 cavalry squadron, 1 cyclist company)
—1 motorized group of 2 gun batteries 105-mm Bofors
—1 field artillery regiment of 3 groups each; each group of 3 75-mm batteries.
—1 artillery observation company
—1 telegraph company of 3 platoons
—1 engineer battalion of 3 companies
—1 sanitary section of 3 companies
—service troops.

The division has a total of 750 officers, 15,000 men, 4,370 animals and 350 motor vehicles.

The armament consists of 5,000 rifles, 345 automatic rifles, 148 machine guns, 27 infantry cannon, 36 mortars and 44 artillery pieces.

The Alpine brigade consists of brigade headquarters; 2 infantry regiments of 3 battalions each, 1 motorized company of infantry cannon, 1 motorized machine gun company, 1 cyclist company, 1 motorized group of 2 75-mm batteries, 1 Alpine observation company, 1 telegraph company of 5 platoons, 2 engineer companies, 1 sanitary section of two companies, and service troops.

The Alpine brigade consists of 600 officers, 11,500 men, 2,300 animals and 500 motor vehicles. Its armament consists of 3,400 rifles, 243 automatic rifles, 108 machine guns, 21 infantry cannon, 24 mortars and 16 artillery pieces.

(*Rassegna di Cultura Militare*, November 1938)

Up to August 1938 the Swiss Army had motorized six 75-mm batteries, eighteen 105-mm batteries, seventeen 120-mm batteries and four 120-mm howitzer batteries.

The Swiss 105-mm gun weighs 7,850 lbs. It has a vertical angle from 5° to +43°, and horizontal angle of 60°. Its range is about 18,700 yards; the projectile weighs 33 lbs. and has a quick fuse. The shell fragments strike in a radius of 150 yards. The maximum speed of movement of the 105-mm guns, on pneumatic tires, on a road, is 44 miles per hour, while the motorized 120-mm gun cannot move faster than 9 miles per hour.

(*Krasnaya Zveyezda*, 27 January 1939)

Swiss mountain artillery is composed of six battalions (12 batteries) armed with 75-mm mountain guns. This gun weighs 1750 lbs., its projectile weighs 13 lbs., it has a range of 11,500 yards. Vertical angle -10° and +50°, horizontal 6°. The gun is transported on 9 packs.

The battalion of Swiss mountain artillery consists of headquarters, 2 batteries, and 2 train columns (ammunition and supplies), on 100 pack animals.

On 5 April the Swiss Federal Council issued a decree extending compulsory military service to able-bodied men up to 60 years of age. All men physically unfit for front-line duty will be liable to conscription in a new auxiliary service.

Switzerland has no standing army and is dependent upon the National Militia, in which all men are required to serve annual terms. Heretofore all men between the ages of 20 and 48 have been required to serve.

Switzerland with a population of 4,000,000 can mobilize 200,000 men in an emergency not including the unarmed "Landsturm" comprising men of advanced age.

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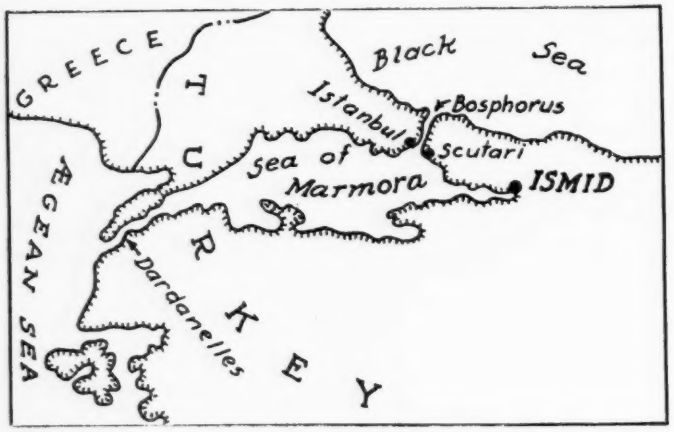
## TURKEY

On 20 April the Turkish government signed a draft agreement with two German companies, Gute Hoffnug's Hutte and Philipp Holzmann for the construction of a naval arsenal at Geuljik near Imid at a cost of about 2,300,000 pounds. The site of the new base is at the eastern end of

the Sea of Marmora between Turkey's two strategic straits, the Dardanelles and the Bosphorus.

(*New York Times*, April 21, 1939)




NEW NAVAL ARSENAL NEAR ISMID UNDER CONSTRUCTION

The terms under which Germany granted Turkey a loan of 150 million marks provide for the following:

(1) Turkey to employ German engineers if it is necessary to have foreign specialists to complete projects under contract;

(2) To transport all materials purchased abroad in German ships;

(3) To confine all orders for handling freight exclusively to German firms.

(*Journal de la Marine Marchand*, 9 February 1939)

## URUGUAY

The foreign commerce of the Republic totaled $99,887,000 in 1937, a gain of 22.1 per cent over that of 1936.

Great Britain ranked first as supplier of Uruguayan purchases, followed by the United States, Germany and Japan. The same nations ranked in order on the export side.

The rate of exchange of the Uruguayan peso was 55 cents to the dollar.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## VENEZUELA

With a gain of $82,118,000 or 32 per cent in 1937, the aggregate foreign commerce of Venezuela reached a value of $332,000. The United States ranked first both in imports and exports. Germany and Great Britain were second and third, respectively, in exports.

Petroleum asphalt was the principal export product. The bolivar rate was 28 cents to the dollar.

(*Latin American Foreign Trade, F. T. S.* No. 71, 1939)

## YUGOSLAVIA*

The peacetime army consists of 148,000 men including 9,000 frontier guards and 20,000 gendarmes. This army is organized as follows:

5 armies (each of 3 infantry divisions, 1 heavy artillery regiment and service troops)
2 cavalry divisions
1 guard division.

Each infantry division has two or three infantry regiments, two artillery regiments and service troops.

Each cavalry division has two brigades, of two regiments, of two squadrons each (one cyclist, the other horse).

The guard division consists of one infantry regiment, one cavalry brigade and one field artillery regiment.

The peacetime army strength is:

58 infantry regiments, or 158 battalions (2 cyclists battalions)
40 cavalry squadrons
148 light batteries, 45 heavy batteries, 16 antiaircraft batteries or a total of 823 light guns and 180 heavy guns.
42 engineer companies
2 tank companies (120 tanks)
1 chemical battalion.

The navy consists of a few old small units of little combat value and its reorganization is now under study.

The air force consists of two brigades of 5 flights each. Each flight has three or four groups, each of from two to three squadrons. There is a total of 45 squadrons of airplanes and 9 of hydroplanes.

Yugoslavia can mobilize one and a half million men in time of war.

(*Rivista di Fanteria*, September 1938)

*Artillery.*—The artillery is organized as follows:

To each infantry division is assigned two field artillery regiments. In peacetime one of them consists of a field howitzer battalion and a mountain artillery battalion; the other of a field artillery group.

The guard brigade has 1 field artillery regiment of two battalions of four batteries each.

Each cavalry division has 1 group of two field artillery gun batteries and one mountain artillery battery.

Each army command has 1 regiment of heavy artillery of two groups of from two to three batteries each, equipped with the 105-mm, 150-mm or 155-mm.

GHQ has one regiment of fortress artillery of 16 batteries and three antiaircraft regiments.

At the beginning of 1937, the Yugoslav Army had 140 light batteries, 45 heavy batteries and 16 antiaircraft batteries, making a total of 382 light pieces and 180 heavy pieces.

Infantry guns are not included in the figures given above. To each infantry regiment is attached a gun section.

The motorization of the heavy and antiaircraft artillery is in harmony with the road net. The railway system is deficient, rendering difficult the reenforcement of the army.

Originally, the artillery materiel was of Austro-Hungarian types; since the war, all new matériel is Skoda and Schneider-Crussot.

In general, the Yugoslav Army has good artillery, although there are many different types. The training and morale are excellent.

(*Artilleristiche Rundschau*, December 1938)

*Yugoslavia is about the size of the state of Oregon.

Yugoslavia is divided into five military regions as follows:

1st—Neusatz
2d —Sarajevo
3d —Skoplye
4th—Agram
5th—Nitsch

The regular army consists of five armies with fifteen divisions (there is no corps organization) two cavalry divisions, one guard division, aviation and frontier corps. The strength in 1938 was 9,245 officers, 9,883 non-commissioned officers and 115,000 enlisted.

The frontier corps consists of 43 officers, 193 non-commissioned officers and 8,317 enlisted men.

The navy consists of 583 officers, 2,507 non-commissioned and 4,656 sailors.

The guard army which comprises 9 regiments and has a military organization consisting of 4,600 officers, 4,050 non-commissioned officers and 14,000 gendarmes. In peacetime this force is under the Ministry of the Interior, although its training and administration are under the War Department.

Each army comprises three infantry divisions, an artillery regiment and supply services. The infantry divisions consists of from three to four infantry regiments, two artillery regiments and miscellaneous troops.

The guard division consists of one infantry regiment, one cavalry brigade and one artillery regiment.

The cavalry division comprises two brigades of two regiments each, one cyclist battalion, one horse-drawn artillery group and service troops.

There are altogether fifty-four infantry regiments and two mountain regiments.

There is a varied assortment of infantry equipment such as the rifles Mauser, Maurlicher and Lebel; French and native hand grenades; Czech automatic rifles, light Czech and "Schwarzlose" machine guns; heavy machine guns type Schwarzlose, Saint-Etienne, Hotchkiss, Bergmann and Maxim and French and Skoda infantry cannons.

Each army has a tank company equipped with tanks of the Renault, Vickers or Czech types.

The artillery comprises thirty-two field artillery regiments, five heavy artillery regiments, three heavy artillery groups, two horse artillery groups, one fortress artillery regiment, two independent mountain batteries and three antiaircraft regiments.

The field artillery regiments consist of two battalions of three batteries each, one group handling 75-mm mountain guns and 100-mm howitzers. The whole artillery is organized for movement in mountains.

The heavy artillery is wholly motorized and is equipped with guns of 105-mm, 120-mm and 150-mm and 155-mm of French or Czech types.

The antiaircraft regiment consists of two battalions of two or three batteries each, with a diversity of materiel as follows: Skoda guns 66-mm and 76-mm and Vickers 75-mm. To each corps is assigned a searchlight battalion and an antiaircraft machine gun company.

There are four engineer regiments, one electro-mechanics regiment, a railway sapper regiment, a signal regiment and a pigeon battalion.

The striking thing about the Yugoslav Army is the great variety of materiel, which will make difficult its employment in the field. However, steps are being taken to have more uniformity of equipment.

The air force with its staff and technical personnel, comprises two brigades with eight regiments, or 28 squadrons with 600 airplanes, one balloon battalion and the antiaircraft artillery.

The naval air force comprises 2 hydroplane groups with 7 squadrons and 125 hydroplanes. Aviation materiel is a mixture of various types: French, German (D.O.Y. and D.O. 17), British, Polish and Czech.

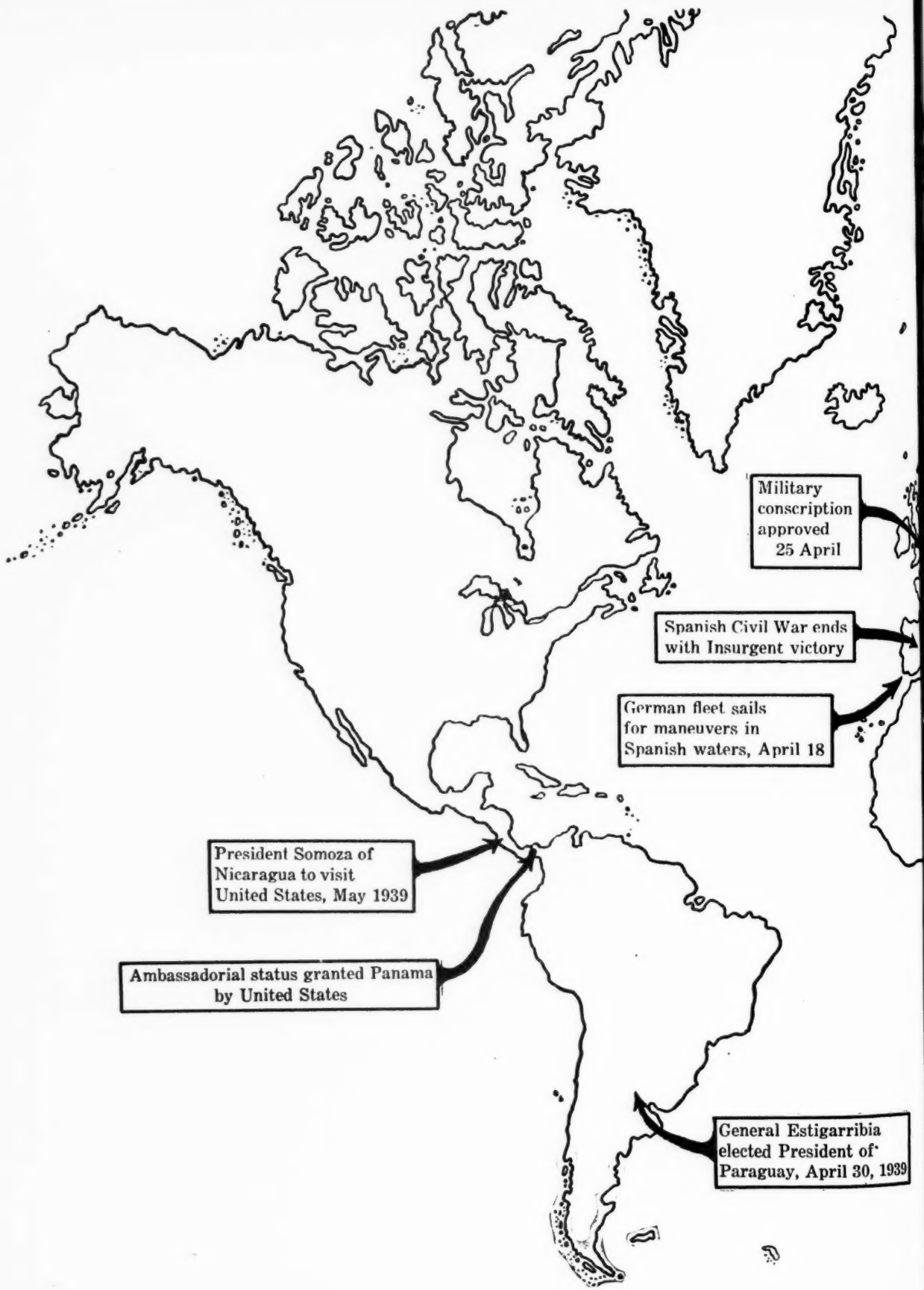
The navy is relatively weak. In addition to four monitors in the Danube, the Adriatic fleet comprises: 8 torpedo boats, 4 submarines, 2 fast boats, 17-mine planters and one school ship. There is a construction program of 100,000 tons.

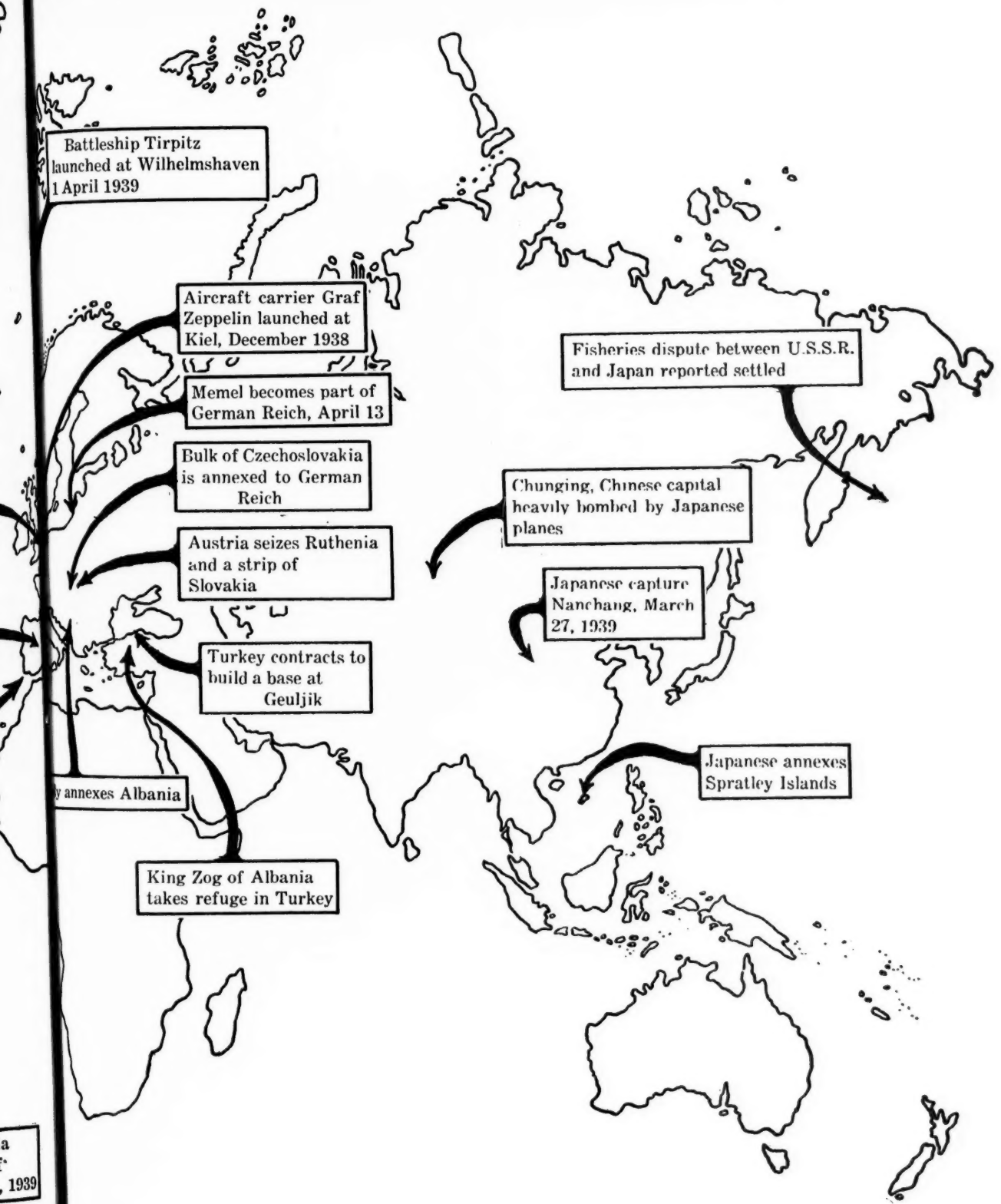
The morale of the army is high. Motorization, which had been delayed for financial reasons, is on the way.

(*La France Militaire*, March 2, 1939)

**The Merchant Marine is an essential part of naval operations. The United States, with 60 harbors and 7,000 miles of coast line, is peculiarly dependent upon the Navy for defense. Although various claims have been made concerning the percentage of naval strength attributed to commercial vessels, the determination of such percentage is believed to be an impossible and unnecessary task. The question of relative importance, it might be said, is about on a par with endeavoring to determine the comparative value of the lungs and the heart of a human being. For the purposes of this study it is only necessary to state that a large volume of merchant tonnage is necessary to the effective functioning of the armed forces of the Nation in time of trouble—UNITED STATES MARITIME COMMISSION, Economic Survey of the American Merchant Marine.**

*—(From United States Naval Institute Proceedings, April 1939)*


Military conscription approved 25 April
Spanish Civil War ends with Insurgent victory
German fleet sails for maneuvers in Spanish waters, April 18
President Somoza of Nicaragua to visit United States, May 1939
Ambassadorial status granted Panama by United States
General Estigarribia elected President of Paraguay, April 30, 1939


Battleship Tirpitz launched at Wilhelmshaven 1 April 1939
Aircraft carrier Graf Zeppelin launched at Kiel, December 1938
Memel becomes part of German Reich, April 13
Bulk of Czechoslovakia is annexed to German Reich
Austria seizes Ruthenia and a strip of Slovakia
Turkey contracts to build a base at Geuljik
y annexes Albania
King Zog of Albania takes refuge in Turkey
Fisheries dispute between U.S.S.R. and Japan reported settled
Chunging, Chinese capital heavily bombed by Japanese planes
Japanese capture Nanchang, March 27, 1939
Japanese annexes Spratley Islands

# The Spanish Civil War

*Wide World Photo.*

INSURGENT TROOPS ADVANCING THROUGH THICK UNDERBRUSH IN THE CATALONIA OFFENSIVE

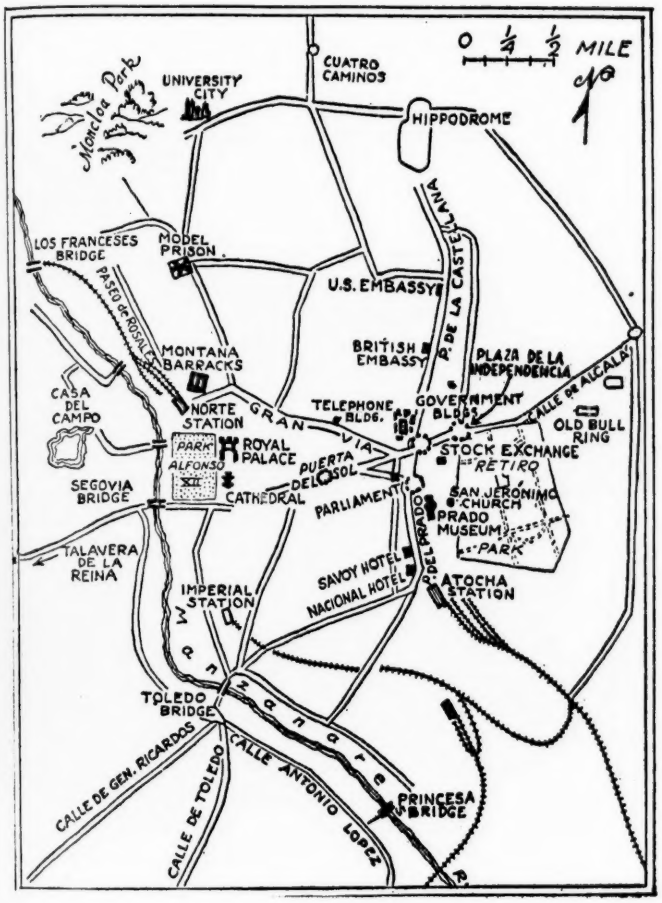
Madrid capitulated on 28 March 1939. Not a shot was fired, although the capital had held out most tenaciously for two years, four months and twenty one days and its defense will go down in history as one of the most heroically defended sieges of all times. The city was the symbol of Republican resistance; with its fall, hostilities were suspended and this bloody civil strife, comparable to the French Revolution and the American Civil War, came to an end.

After the conquest of Catalonia, the defeat of Government Spain seemed certain. The capture of Barcelona, Spain's greatest industrial city last 26 January, was Franco's most spectacular triumph, and marked the preface of the Loyalist collapse. Cleaning up quickly the province of Catalonia and forcing some 250,000 Republican troops and thousands of civilians across the border into France in one of the greatest mass flights in history, General Franco massed his triumphal forces around Madrid and Valencia and that small area of Central Spain that was still held by the Government.

Negotiations were soon reported under way for an armistice. On 27 February, the governments of Great Britain and France formally recognized the Franco regime as the government of Spain. Most of the members of the Republican cabinet abandoned the country, fleeing by airplane to France. Madrid, once again the capital of what was left of the Republic, was turned over to General José Miaja and other military chieftans who on 6 March had overthrown the tottering regime of Premier Juan Negrin. General Segismundo Casado, who had been commander of the People's Army and who headed the new government temporarily until Miaja's selection, was made Minister of National Defense. The new Junta which took charge of Madrid had to suppress immediately a strong Communist revolt, which was finally broken after severe street fighting. Negotiations were started at once for a "peace with honor," to which Franco replied: "Unconditional surrender."

Pending peace negotiations, Generalissimo Franco held back his armies which were all poised for attacks on Madrid and Valencia, chief port of the one-fourth of Spain still under Republican rule. After considerable delay due to failure to agree on peace terms, Franco launched an offensive on 27

March in an effort to expedite the inevitable end of the war. One wing of the Nationalist Central Army, under General Garcia Valino, struck northeastward from Toledo shattering Madrid's southern defenses. Another drive, on the Estremadura Front, striking out from Cordoba captured the Almaden mercury mines with hardly any resistance.



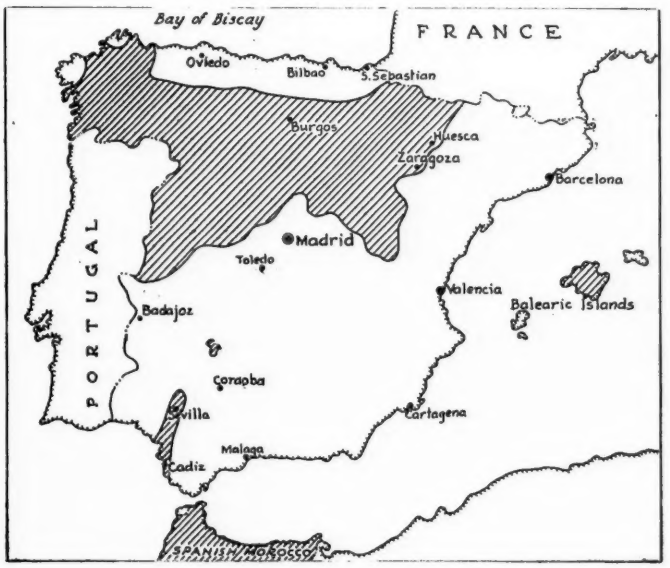

MADRID CAPITULATES 28 MARCH 1939 AFTER A SIEGE OF TWO YEARS, FOUR MONTHS AND TWENTY-ONE DAYS

The surrender of Madrid on 28 March was followed by that of the nine provincial capitals on the 29th: Valencia, Alicante, Murcia, Cuenca, Jaen Ciudad Real, Almeria, Guadalajara and Albacete. Cartagena, Republican Naval Base, also capitulated. After the fall of Albacete, the Nationalists officially announced the war was over in these words: "The war has ended—total victory is Franco's."

In the meantime, the Republican fleet had surrendered on 19 March to the French authorities at the port of Bizerte, the great French North African Naval Base. This event recalls the last chapter of the Russian Civil War in 1920, when the armies of General Baron Peter Wrangel were forced to evacuate Crimea. Wrangel's Russian Fleet of some thirty-eight warships took refuge in Bizerte to become a bone of contention between the French and Soviet authorities.

## SHORT SUMMARY OF THE CIVIL WAR

The war broke out in Spanish Morocco on 17 July 1936 and by the following day several cities of Spain had joined the movement. The revolt, supported by the bulk of Spain's Regular Army Officers, a considerable portion of the conscripted personnel, the semi-military "Requetes" and "Falangistas," gained the ascendancy in the Spanish provinces of Navarre, Old Castille and part of Andalusia. General Franco ferried men and materials across the Strait of Gibraltar by air, concentrated his forces in Seville and commenced to march on Madrid.




GENERAL SITUATION 18 JULY 1936

Simultaneously in the North, General Emilio Mola—subsequently killed in an air crash in June 1937—established his headquarters at Burgos and marched south towards Madrid. The two national forces established contact at Cáceres and advancing up the valley of the Tagus, swept aside all Government resistance. Madrid could have been captured at this time, but General Franco paused to relieve the siege of the Alcazar in Toledo* and thus gave time for arrival of reinforcements, particularly tanks and airplanes, that were being rushed from abroad for the defense of the city. The siege commenced on 21 October and it was not until 17 November that exhausted Insurgent troops reached the suburbs of Madrid across the Manzanares River, where they remained until the end of the war.

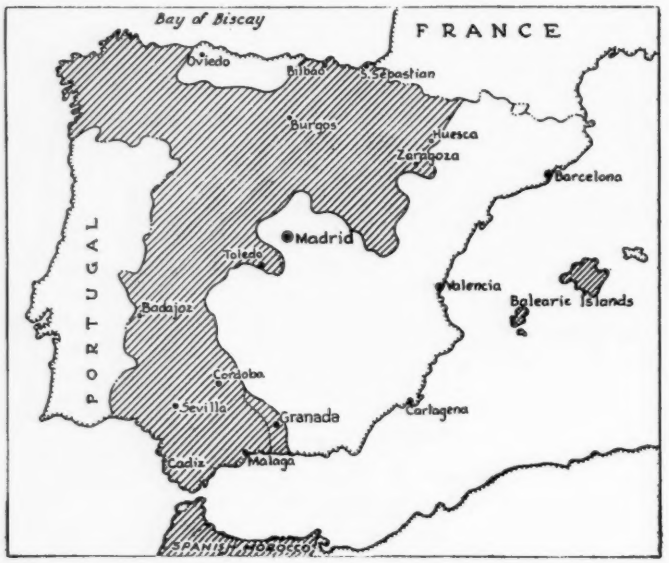
While the Government was successfully defending Madrid, General Mola took Irun, the gateway into France, and San Sebastian. In June 1937, Bilbao's "Iron Ring" of defenses was cracked and the area along Biscay Bay, including Santander and Gijón, was rather quickly cleaned up.

On 21 December 1937, the Government captured Teruel, but on 22 February 1938, General Franco retook it and shortly after launched his drive toward the Mediterranean, one of the best conducted military operations of modern times. On 15 April, the Insurgents reached Vinaroz, dividing Republican Spain into two parts.

The Government launched its last offensive near Gandesa in July 1938 and established a pocket on the eastern side of the Ebro River, which was stubbornly held until late Fall against repeated Insurgent attacks.

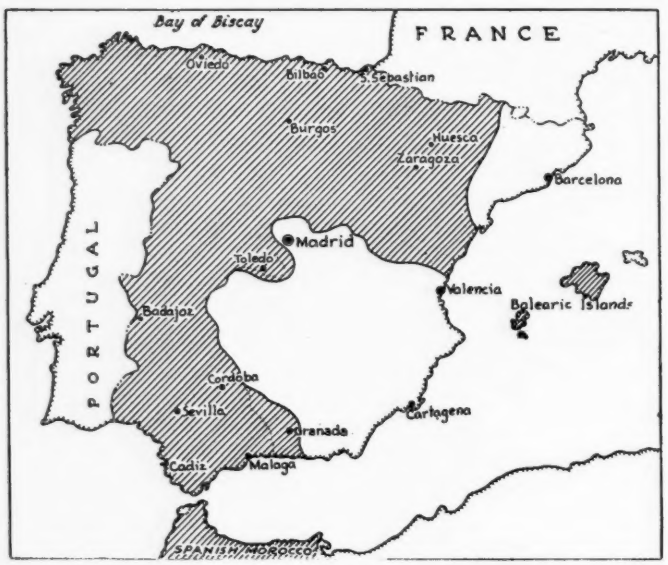
*The siege of the Alcazar of Toledo lasted 70 days. Out of 1100 men and 400 women and children in the fortress, 139 died and 580 were wounded.

After having cleaned out the Ebro pocket, General Franco launched his Catalonian Drive on 28 December 1938. This offensive was successful everywhere, the Government defenses crumbling before the Insurgent attacks.




GENERAL SITUATION 18 JULY 1937

The most spectacular Republican achievements were the defeat of an Italian motorized force at Guadalajara on 18 March 1937; the offensive against Brunete, outside of Madrid, and the launching of a surprise attack against Teruel on 21 December 1937.




GENERAL SITUATION 18 JULY 1938

General Franco took and held the initiative and remained more or less constantly on the offensive since the beginning of the war, taking advantage of a considerable superiority of matériel to overcome the resistance of numerically superior, but generally inexperienced, poorly trained and illy equipped Government militia. With air superiority —largely the result of active Italian and German intervention—and preponderance at sea, he succeeded in shutting off most of the Government supplies. Air power was used to attack troops in the battlefield and to bombard cities and industrial centers. Bombardment aviation also proved to be a valuable blockade weapon and scores of merchant ships were sunk or damaged by airplane attacks.

## CASUALTIES

According to the Associated Press, the cost of lives of thirty-two months of Civil War, is estimated at more than 1,000,000 men, nearly five per cent of the population. Although complete casualty lists have never been available, military observers have calculated that more than 700,000 men have been killed in battle on both sides; 30,000 assassinated or executed; 15,000 civilians killed in air raids and from 40,000 to 50,000 died of disease or malnutrition directly attributed to the war. There are no figures on the number wounded in battle who subsequently died.

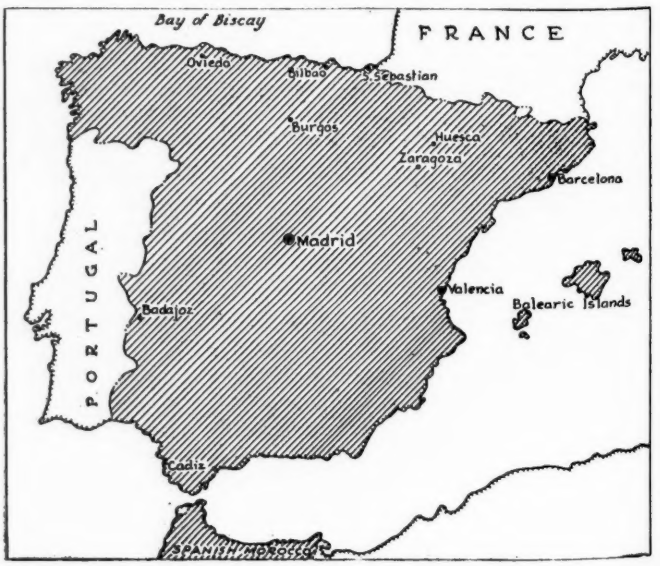
Incomplete figures indicate that 335 Americans and 432 British were killed in fighting with the Government forces; 3,000 Italians were killed and 14,000 wounded fighting for the Insurgents up to the end of Janury of this year.

Official statements made in Rome gives the losses of the Italian Legionary Air Force in Spain from the commencement of operations to the end of the Civil War as 174 officers and noncommissioned officers and men killed, and 88 airplanes lost behind the enemy lines, of which 73 or 83 per cent, were fighters.

## CONCLUSION

The Republic of 1931 is dead. But whether Spain will revert to a monarchy, as some of Franco's most ardent supporters desire and what kind of a monarchy, or whether the country will be ruled as a dictatorship and what kind of a dictatorship, are questions which have yet to be disclosed.

On 23 April, the Nationalist Government acted to restore to former King Alfonso XIII and all his relatives to the fourth degree the private properties which they owned before the republic was proclaimed on 14 April 1931. Alfonso was once one of the richest monarchs of his time, having inherited a large fortune from his mother which he in-




GENERAL SITUATION 1 APRIL 1939

creased by successful investments. His reign began on 17 May 1902; he left Spain on 15 April 1931, the day after he signed a manifesto giving up his throne but renouncing "none of my rights." The King and members of his family are in Rome, where both Alfonso and his youngest son, Prince Juan, have described themselves as "simple soldiers, obedient to the orders of Generalissimo Franco." Naturally, the future form of government in Spain is a matter of utmost interest, particularly so at this time in view of the complicated European situation.

*Was the Spanish Civil War actually a preview of a major conflict?* Military experts are at a disagreement on this highly controversial question. For example, some maintain that the morale of the civilian population can be shaken but not destroyed by incessant bombings; on the other hand, partisans of air warfare insist that the Spanish conflict proved little because the numbers and quality of the planes provided no index to what would be put into the air in the event of a general European war. As against the 30 or 40 bombers loosed on Barcelona in March of last year, at least ten times that many would swoop down raining death on selected cities and at much more frequent intervals.

It is reasonable to state that the weapons used and the tactics employed in this war, both on land and in the air, have been sufficiently numerous and modern to permit the military student to draw valuable lessons, the careful application of which no modern army can afford to overlook.

# Lessons from Spain

### AVIATION

**Fast planes were found to overreach their targets. Speed meant larger fields which were not available. Bombing from the air failed to demoralize civilian populations.**

### ANTIAIRCRAFT ARTILLERY

**Antiaircraft guns made an excellent showing. The moral effects on attacking planes were particularly notable.**

### TANKS

**Too few tanks were used to shed much light on the question of whether or not they can be used to break up "wars of position" and restore mobility to modern warfare. Light tanks were less effective than heavier models and infantry won some success against tanks with hand grenades. Transport was inadequate and was used improperly. Little use was made of the principle of mobility.**

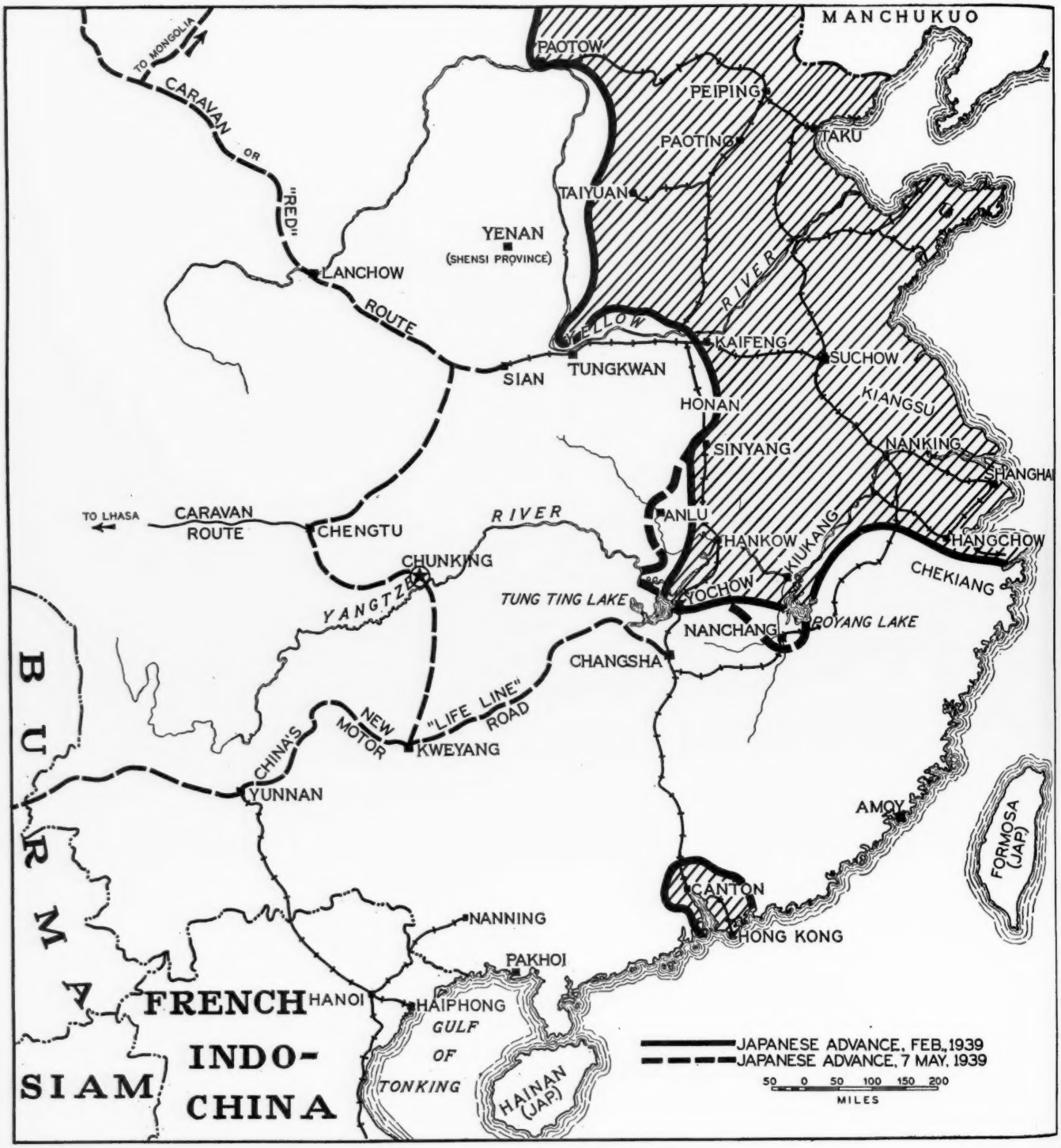
### INFANTRY

**Infantry must be used as combat units and not be burdened too heavily with munitions for machine guns and field pieces. The pack was reduced to the haversack to meet the complaint that infantry was too burdened to fight.**

**And, in substance, what has been learned is that, in war, airplanes and tanks will help, but it is still necessary to have soldiers.**

**Condensed from Lessons of the War in Spain, by Colonel Rudolf von Xylander, German military expert.**

# The Sino-Japanese War




General Situation as of 24 May 1939

# The Sino-Japanese War

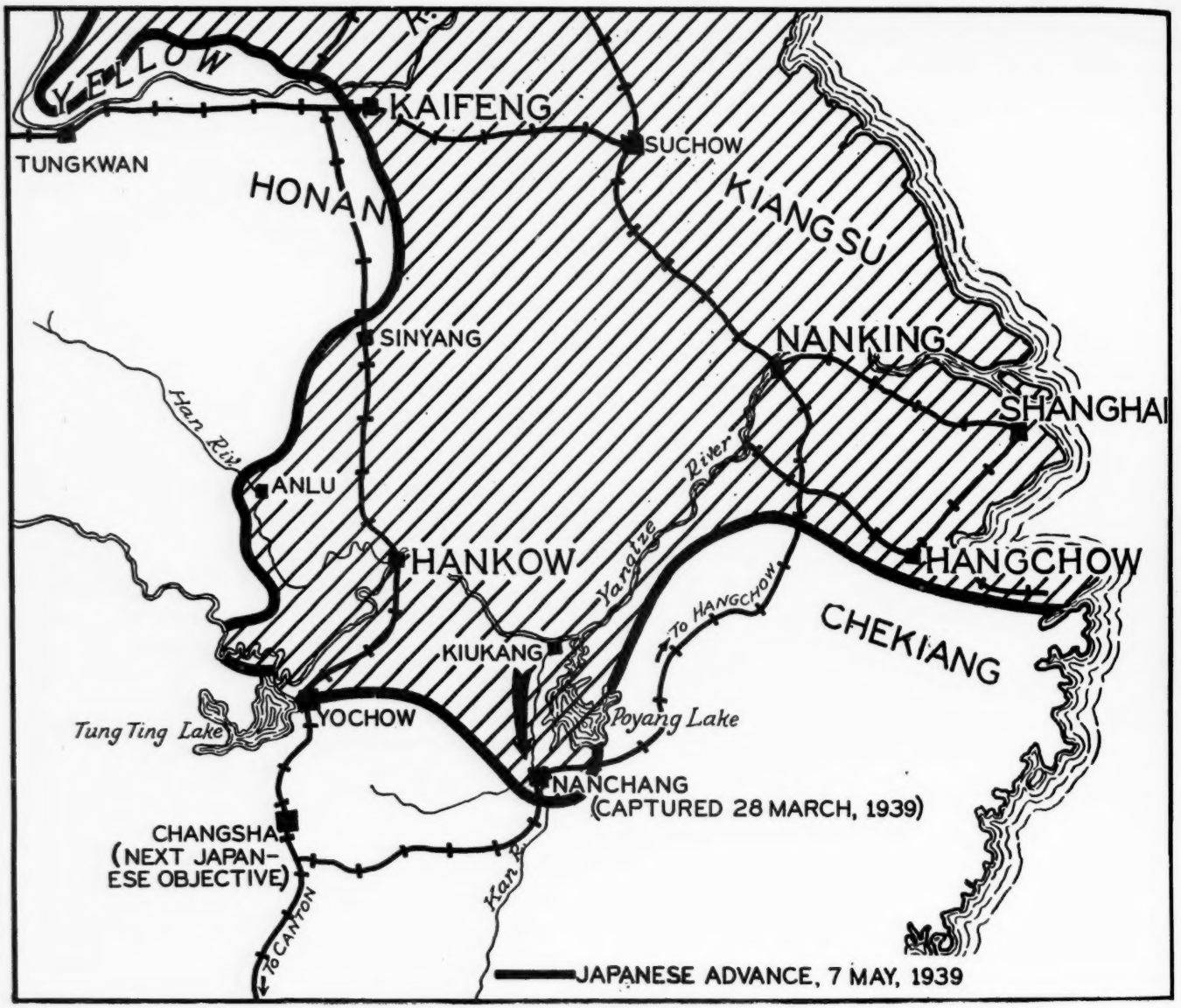
JAPANESE TROOPS ADVANCING TOWARD A CHINESE PILLBOX

*Wide World Photo.*

The only military effort of any importance made by the Japanese army since the occupation of Canton and Hankow last October, was the capture of Nanchang, capital of Kiang-si Province, which for months had been a major Central China air base.

In July 1938, the Japanese concentrated a strong force for operations against Nanchang by occupying Kiukiang, Yangtze River port about eighty miles north of that strategic city. However, due to strong Chinese resistance and unfavorable weather conditions, the advance was stalled at a half-way point and virtually no progress was made last winter. A swift and well prepared drive, protected by airplanes and tanks, was launched on 22 March up the west bank of the Kan River and in seven days the offensive banged its way into Nanchang.

A city of 500,000 inhabitants, Nanchang was a key point on the Chekiang-Hunan railway, China's last line of supply from the east coast. The loss of this key city will be of no small disadvantage to the Chinese armies. Nanchang is the west terminus of the railroad from Hanchow—southwest of Shanghai—running through 600 miles of belt country which no Japanese force has penetrated and from which the Chinese government had been drawing food supplies. Nanchang also gives the Japanese another base for a westerly drive against Changsha, the coveted capital of Hunan Province. This offensive is now in progress and undoubtedly




GENERAL SITUATION ON THE HANKOW FRONT AS OF 24 MAY 1939

will be vigorously pushed, because with the capture of Changsha, rail communication with the southern province of Kwangsi will be completely disrupted.

Japanese occupation of Nanchang will also require rerouting of Chinese guerrilla supply lines and trade routes, since that city has been a focal point for distribution of supplies to the numerous guerrillas which were operating in the triangle Shanghai-Hankow-Nanchang as well as for guerrillas south of the Yangtze that have been obstructing movements of Japanese transports.

Since the fall of Hankow and Canton last October, the Chinese have placed greater emphasis on guerrilla activities. It is reported that at the present time nearly one million men, constituting approximately one-third of China's regular troops, are employed in guerrilla operations. Their mission is not only to cause damage to the enemy, but also to frustrate Japanese attempts to set up puppet regimes and secure Chinese food supplies. Similarly, they seek to create such disturbances so as to make it practically impossible for the Japanese to exploit China's wealth or agricultural possibilities. They operate under the "Guerrilla Section" of the National Military Council of which Generalissimo Chiang Kai-shek is chairman.

Guerrillas have been active recently in Honan Province where they penetrated the Japanese defenses of Kaifeng for the second time, but were compelled to withdraw after a Japanese counterattack. They have also been active in the vicinity of Suchow, the junction of the Tientsin-Pukow and Lunghai railways, and have caused traffic interruptions.

According to "Nichi Nichi," Japan will seek the active assistance of Germany and Italy in an effort to force other Occidental Powers to stop their assistance to China. The Japanese cabinet, it is reported, has finally come to the conclusion that Japan's "overwhelming victories" are insufficient to end the conflict because of the money and supplies that are being furnished China by outside powers. The main objective of Japan's foreign policy is, therefore, to prevent foreign assistance from reaching China in really dangerous dimensions.

Up to this time the Japanese war machine has been consistently victorious; the situation at present really is a victorious stalemate in which the victors have been prevented from cashing in on their gains. The most recent events have shown that the Japanese have obviously reached the outward brim of the area in which their mechanical superiority made progress relatively easy. They can no longer use warships in the treacherous rapids of the upper Yangtze, nor can mechanized units advance in the mountains of the west and southwest. After the capture of Changsha, the war will enter a stage in which no new spectacular victories can be expected.

*Wide World Photo.*

NIPPONNESE TROOPS WADING THROUGH THE MARSHY REGION SOUTHWEST OF HANKOW

Japan's goal today is threefold:

1. To defend the occupied area from attacks beyond the outward brim.
2. To exterminate guerrillas.
3. To organize a puppet government capable both of inspiring popular confidence and of initiating an extensive program of rehabilitation.

Although extensive guerrilla warfare is going on, the Japanese have been able to keep their communications open. By cutting off their possible sources of supply, the Japanese hope that these guerrillas will degenerate into local bandit armies incapable of sustained resistance against regular troops. Japanese efforts to find a puppet government, sufficiently respectable to negotiate a peace treaty, have failed.

Being an industrial nation, Japan must export or perish; yet, her export trade is dwindling and she is short of foreign currencies which she must have in order to purchase essential war materials. Her foreign trade is heavily unbalanced and for the past two years she has spent more gold to balance her international accounts than she now possesses.

There seems to be no doubt that Japan has her hands full with her war in China and is preparing for the third year of the struggle by tightening up government control everywhere. An attempt to reduce prices is about to begin and it will be accompanied by orders for mobilization of materials, the regimentation of labor and the fixation of wages.

In regard to China it may be said that the results confirm the Japanese claims that Chiang Kai-shek's army has lost its offensive power. However, well informed observers report that the Chinese morale is excellent and that the people are thinking in terms of a long drawn out war.

## CONCLUSION

The Japanese are hard pressed; yet, it would be rash to predict that they will not carry out their aims and solve the complicated problems with which they are faced, before the nation's resources are exhausted. On the other hand, they cannot claim an ultimate victory until the Chinese are demoralized, exhausted and willing to accept defeat—and of that there is no evidence at the present time. So, if China is to be conquered, its accomplishment is not yet in sight, and the Sino-Japanese hostilities are doomed to continue for another year at least. The spot light has been shifted to other parts of the world, but the great conflict of the Far East continues with unabated fury.

**"The storm center of the World has shifted to China. Whoever understands that vast Empire has a key to the world politics for the next five centuries."**

John Hay, U.S. Secretary of State, whose series of diplomatic notes during the autumn of 1899 originated the term "Open Door."

# Foreign Military Digests

*Digests of important articles from foreign military periodicals; the remaining articles for each magazine are listed in Catalog of Selected Periodical Articles.*

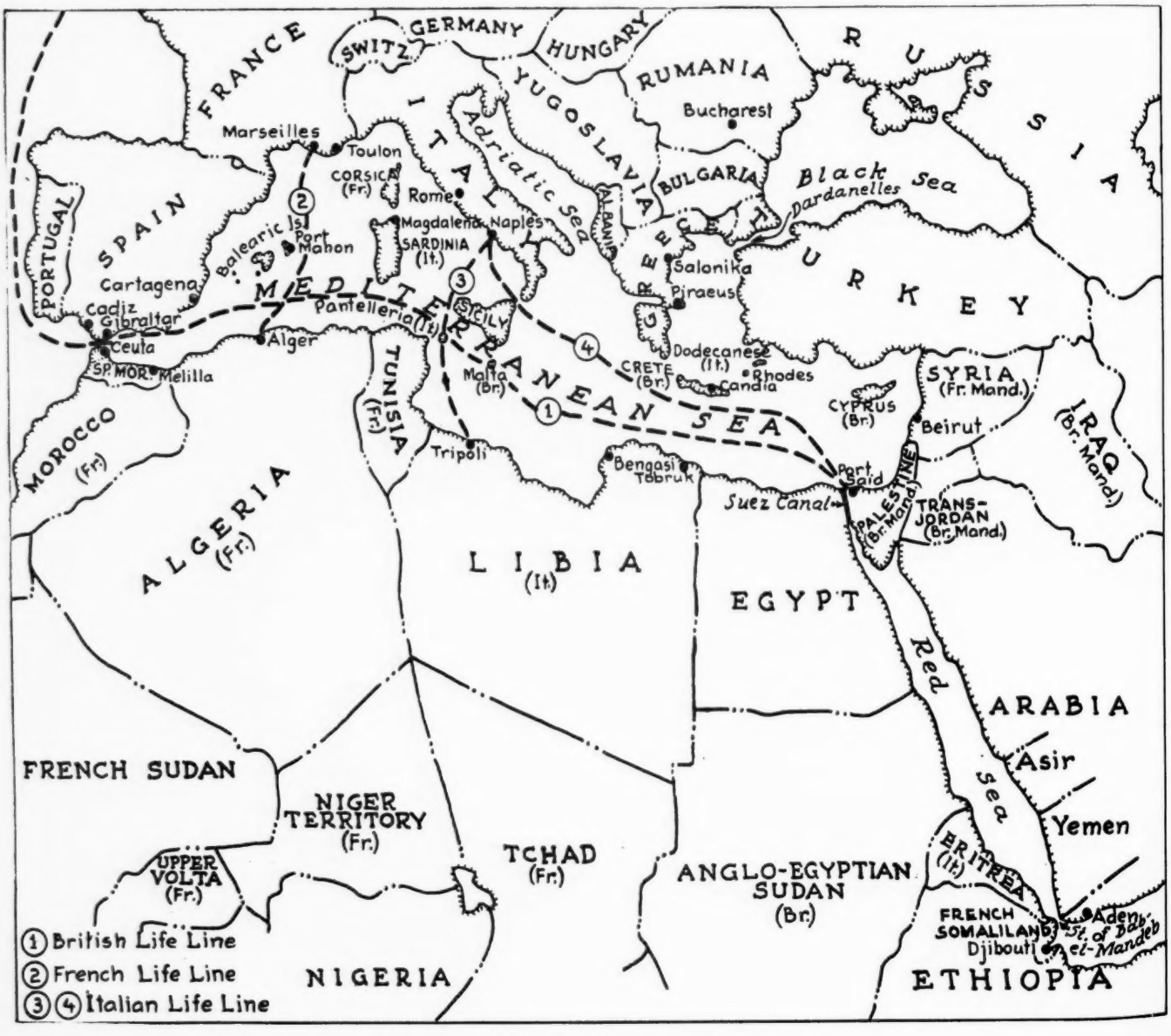
## STRATEGICAL DOCTRINE IN THE MEDITERRANEAN

[Condensed and illustrated from article by Rear Admiral Guiseppe Fioravanzo, Italian Royal Navy, in the Italian Monthly Review *Gerarchia*, February 1939.]

By Lieut. Colonel E. M. Benitez, *Coast Artillery Corps*

No other sea in the world has had or will ever have a history so full of events as the Mediterranean. Battles fought on its shores have given world predominance to the victor. Its physical geography has remained unchanged throughout the centuries, but its political situation has been and still is in constant evolution. It seems appropriate, therefore, that the Mediterranean situation be studied from the military point of view.

The Mediterranean problem—which also includes the Black and Red Seas—is controlled today by an element of an economic nature, in which all the countries of the world




The Mediterranean Situation Showing Life-Lines

are interested to a greater or lesser degree, namely, freedom of traffic through its waters. No other sea presents this economic interest to such a great extent. This interest is indispensable to the existence of those countries whose borders lie on this sea, while for other countries its importance is in proportion to the volume of business traffic. From this fundamental consideration it follows that peace in the Mediterranean is essential to the prosperity of every nation; that whatever conflict takes place in said body of water is detrimental to the interests of all, and that such clashes can spread and cause a general conflagration with the greatest ease.

The maintenance of peace on the Mediterranean depends mainly upon the conciliation of interests of three great powers: Italy, France and England.

Conciliation is a political fact, but it is outside the scope of this study, which will be limited to a discussion of the defensive and offensive objectives of each of the three powers named above.

It is important to bear in mind the concept that war on the sea is exclusively a problem involving freedom of a country's own communications in order to be capable of effecting replenishment of war stocks for the nation, transporting troops for landing operations on enemy territory and offensive incursions against the adversary's coasts—such as bombardments and laying of mine fields—in opposition to similar operations conducted by the enemy.

Without hesitation, it can be said that coastal bombardments involve a type of naval action that is very hazardous. It is believed that such a mission can be carried out by the air force with greater effectiveness and with less risk.

ITALY must be able to rely upon the following factors:

(1) Security of her world and empire communications through Gibraltar and the Suez Canal in a measure inversely proportional to the volume of supplies that could be obtained from her continental allies.
(2) Security of her communications with Libia and the Dodecanese.
(3) Security of her communications with the Black Sea in the event that Italy has allies or friendly neutrals in that area.

FRANCE considers the following factors of great importance:

(1) Security of her communications with Northern Africa.
(2) Security of her communications with the Indian Ocean and the Far East.
(3) Security of her communications with Syria and the Black Sea.

ENGLAND considers the Mediterranean as the shortest and most efficient route to her colonial empire, three-fourths of which faces the Indian Ocean, the Red Sea and the Near East.

The Mediterranean lines of communication are essential to Italy; on the other hand, England and France can communicate with any point on earth without passing through the Mediterranean, by prolonging the route, although efficiency is thereby lessened. Thus, for example, from Nice one could reach Beirut via Toulose, Bordeaux, Cape of Good Hope, Persian Gulf and the Arabic countries.

If Italy's maritime communications are completely cut off, she cannot retaliate by cutting off the lines of communication of France and England. However, Anglo-French communications with Egypt, Syria, Palestine and the Red Sea can be greatly interfered with, and it should be remembered that the Mossul oil pipeline runs through Syria and Palestine. It is evident that England and France would receive a serious setback in efficiency and a loss of prestige. England, in particular, would experience serious difficulties in case she had to relinquish the Mediterranean route.

The important Mediterranean route has four Straits of vital importance:

(1) Gibraltar
(2) Sicilian Canal
(3) Suez Canal
(4) Bab-el-Mandeb

The first and third are not in Italian hands; however, Italy controls the second and fourth through her Metropolitan positions in the Ionian-Sicilian-Libian system and through those in the Ethiopian Empire, respectively. These advantageous geographical positions give Italy a strategical advantage that compensates the disadvantage of exercising no control either at Gibraltar or Suez, as she is thus capable of easily interfering with the world's trans-Mediterranean lines of communication that run through these narrow lanes of water.

Three other positions of considerable strategical importance belong to Italy:

(1) Sardinia, which flanks the communications between France and her Northern African Empire.
(2) The Apulian-Albanian system, which by virtue of a treaty with Albania, permits Italy to close the Adriatic Sea to an eventual enemy.*
(3) The Italian Aegean Islands, together with Italian positions in Cyrenaica—especially Tobruk—which permits Italy to close the Dardanelles, thereby making her presence felt in the Eastern Mediterranean.

England controls the following positions:

The Port Said-Aden system, situated on the flank of the passage through the Red Sea and the Indian Ocean.

France has the following positions:

(1) In the Western Mediterranean, with the coast of Provence on the north and the coast of Morocco-Algeria-Tunisia on the south.
(2) In the Eastern Mediterranean, with the coast of Syria.
(3) In the Red Sea, with Djibouti.

Taking into consideration the possibilities of reciprocal offensive and defensive action and the logistic capacities of

*Italy landed troops and annexed Albania last April.

these locations, it is possible to deduce the following strategic factors:

### ENGLAND

Completely equipped English naval bases exist only at Gibraltar, Malta and Aden; the others are not as yet logistically equipped for defense in such a manner as to be classified as naval bases. Malta, however, could be entirely neutralized by aerial attacks, should Great Britain find herself at war with France or Italy. Likewise, Aden would be exposed to air raids launched from the Italian East Africa territory. France could easily operate against Gibraltar through the use of her air forces at Algeria and Morocco.

THE WESTERN MEDITERRANEAN

In general, it can be asserted that at present all English positions are greatly weakened because they occupy restricted areas—excepting those of Egypt—and lack own defensive resources other than those concentrated at the place. These are endangered by the possibilities of air attacks, while the lines of communication are threatened by the submarine menace.

At this point it is well to mention that within restricted sea areas, the dual airplane-submarine factor represents an element of power which has radically transformed the traditional conception of relativity between maritime powers of the various nations. Great results can now be obtained through the exploitation of these two weapons of warfare: the airplane for carrying out raids against ships lying at anchor, and the submarine for creating a serious menace while ships are at sea. Hence, the danger to shipping is proportional to the possibilities of combining these two types of weapons.

It can be asserted, therefore, as events during the late years have shown, that the safety of the Mediterranean route for the British Empire now represents more of a problem of agreements and alliances than the use of force. Nevertheless, England's position is always a formidable one in connection with the Mediterranean countries, because she is in a position to interfere with the Mediterranean communications of any other country. She is in a very favorable position to interfere with communications in the Eastern Mediterranean and the Red Sea. Moreover, since England controls Gibraltar, a barrier is thereby created for the communications between the two French maritime frontiers: the Mediterranean and the Atlantic.

### FRANCE

French bases are concentrated in the Western Mediterranean and she only has the Syrian and Djibouti positions in the East.

Bierut and Djibouti, located far away from the metropolis and poor in resources—particularly Djibouti—have logistic problems which detract from their value as important positions. In addition, it can be said that Djibouti is neutralized by the Italian Ethiopian Empire.

Corsica and Tunisia, on the other hand, have a great strategic anti-Italian efficiency of great value. The former breaks up the geographical continuity of the Italian Tyrrhenian first line of defense which extends from the Tuscan archipelago to Cape Spartivento in Sardinia. France is thus capable of launching air bombardment attacks on the whole Italian peninsula without great difficulty and this fact depreciates the value of the splendid Italian harbor at Maddalena. Corsica in Italian hands could be used as the most advanced central point for defensive maneuvers covering the whole Tyrrhenian area. France is thus the master of both routes from the upper Tyrrhenian area to the Western Mediterranean; Corsica also increases the flank value of Toulon.

Tunisia, with its great base as Bizerte, is a deterring factor to the domination of the Central Mediterranean area by the Ionian-Sicilian-Libian system; hence the possibilities of Italian interference with the transit between the Eastern and Western Mediterranean are lessened.

### ITALY

Italy itself, together with her possessions in the Aegean, Cyrenaica and East Africa, forms a great base for extending aero-maritime operations to the heart of the Mediterranean.

Regarding possible and existing military ports, all those situated outside of the upper Tyrrhenian and Adriatic have strategical value of prime importance. Those in the Adriatic have more than local Mediterranean function. Spezia can be considered as neutralizing the value of Toulon, except as a base of departure for important operations against the great Mediterranean arteries. Italy controls the upper and lower Adriatic, just as she did during the World War, but now augmented by the acquisition of Pola. Midway, however, the strategical predominance is possessed by Yugoslavia, inasmuch as Dalmatia—with its chain of islands—forms a sort of unique base having a thousand outlets.

The military efficiency of the Ionian-Sicilian-Libian system neutralizes Malta; Bizerte is counterbalanced, while Tunisia is not immune from prompt offensive operations.

Sicily, in particular, is the center of maneuver between all the Mediterranean basins via the internal lines. Together with Sardinia, these two islands act as the advanced posts for the lower Tyrrhenian defense against possible enemy attacks.

THE CENTRAL MEDITERRANEAN

From the logistic point of view, the most efficient bases are those in metropolitan territory, while the least efficient are those in the Aegean and Libia. For this reason, adequate stocks of reserve materials should be established in each of these positions.

Prior to the conquest of Ethiopia, the Italian coast positions in the Red Sea and in the Indian Ocean were in deplorable condition, due to the fact that they were situated so far from the mother country. Now, however, these positions have acquired military security, and this factor is steadily improving due to the progressive exploitation of Ethiopia. Once they attain an autonomous life, obviating the necessity of maintaining communications with the homeland, they will be perfect.

In summarizing, it may be said that:

(1) France has a great strategical potentiality in the Western Mediterranean.

(2) England blocks the entrances to the Mediterranean, but can only act weakly in the Center.

(3) Italy is very strong in the Central Mediterranean. She is stronger than England and France in the East and continues to be so as long as England does not improve militarily the positions that she now occupies. In the Western Mediterranean, Italy can exercise considerable pressure from her Sardinian bases.

From the aeronautical point of view, Italy is the only power—by reason of the radius of action of the modern aircraft that she now possesses—that can keep all the Mediterranean and surrounding countries under her aerial control. This advantage has an enormous bearing on the conduct of war by land or sea, as well as purely on the conduct of air warfare. Neither France nor England are in a condition to conduct air warfare with the same efficiency and intensity. France cannot do so because she has almost all her strategical positions concentrated in the Western basin, while England, inasmuch as she cannot exploit Malta with sufficient safety, can exert only a weak aerial influence over the Central Mediterranean.

Thus it may be seen that each of the great powers discussed is in a position to inflict very severe blows to any of the other two by employing different methods, and that the coalition of any two would be disastrous for the remaining one.

The minor powers are important from the standpoint of support that they could place at the disposal of one of the three powers with whom they would happen to become allied. Their actual force would not be of great value. However, while for Italy the alliance with these minor powers would be essentially of defensive importance, for England and France such an alliance would have great offensive value because it would permit them to tighten the circle around Italy, reducing her freedom of action to a limited area and effectively threatening her by the use of air forces.

Spain is in a formidable position. It can be well defined as a sort of a dyke between the Mediterranean and the Atlantic. The power attained by Spain and Portugal in the past centuries can be attributed to their geographical position in regard to the Mediterranean. More than once it has made Iberian waters the theater of struggles between England and France in their efforts to attain world predominance, and this explains the English attitude toward Portugal, whose alliance they need in order to secure the port of Lisbon in the event that Gibraltar should become untenable or non-utilizable as a military post.

Cadiz, Cartagena, Ceuta, Melilla and Port Mahon form a chain which flanks the oceanic communications of the Mediterranean. Port Mahon, the most important port in the Balearic Group, is at the center of the Western basin and permits maneuver on interior lines. The Balearic Islands have been coveted in great struggles ever since the sixteenth century, and these struggles for possession of these islands have not yet terminated. An alliance with Spain would obviously be of primary importance for any maritime power having Mediterranean interests.

Greece, in the Eastern basin, has great importance on account of her strategical value. In addition to the bases of Piraeus and Salonika, there are innumerable number of places in continental and insular waters that could be transformed into bases; thus, Greece possesses a valuable system for cutting off the communications leading west of Suez, towards Palestine, Syria, Turkey and for barring the Dardanelles. Candia has special importance inasmuch as it is

situated in the center of the Eastern Mediterranean and occupies a position similar to that of the Balearics in the Western basin. Candia has not yet been annexed by any power because they all want it and would, therefore, be opposed to seizure by any one in particular.

Yugoslavia has a restricted field for maritime operations because she borders a Mediterranean pocket without controlling the entrance. On account of the formidable tactical value of the Dalmatian coast, however, her friendship is invaluable to Italy because peace in the Adriatic would give her freedom of action for operations somewhere else.

The Black Sea has an economic rather than a strategic value. Geographically, it is a closed sea. Economically, it is the large port from where immense quantities of raw materials and food supplies can be secured. However, the universal importance of the Black Sea is derived from a country with a population of 160,000,000 people with its mass of enormous wealth, which for centuries has been trying to secure a free passage to the open sea. The famous question of the Straits is nothing more than a diplomatic manifestation of the will of Europe—with intermittent military demonstrations headed by England—for preventing Russia from expanding to the West.

The international importance of Turkey hinges on the question of the Straits, which both geographically and politically belong to this nation and whose friendly attitude is necessary for permitting the free passage through them.

### Conclusion

The great problems are continually changing and it is up to the statesmen to effect negotiations that will avoid bloody struggles and reconcile the interests of nations in a harmonious manner. Europe and the world will derive great benefits if the concept of a Mediterranean peace with justice should become a reality in the people's conscience.

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## THE SERBIAN CAMPAIGN OF 1915—CAPTURE OF BELGRADE

### (River Crossings)

["Die Stromübergänge bei Belgrad von Nord nach Süd in den letzten 250 Jahren," by Colonel Rudolph Kiszling. Condensed from *Militärwissenschaftliche Mitteilungen*, September 1938.]

By Captain H. N. Hartness, *Infantry*

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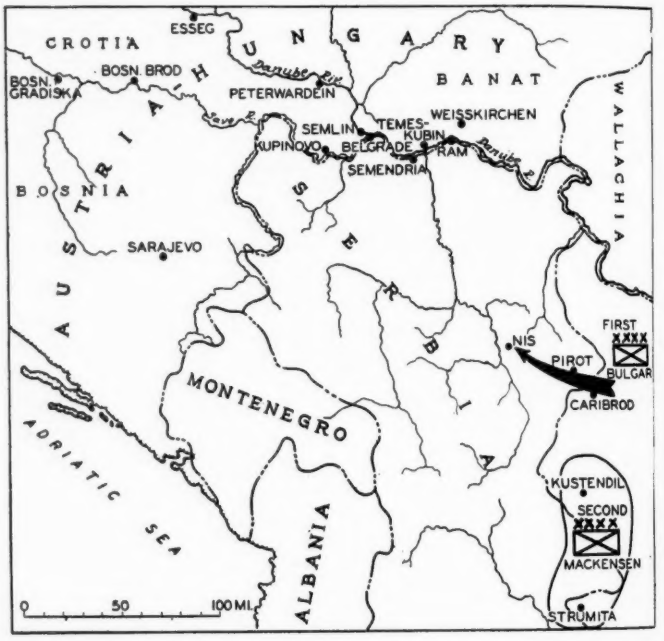
At the beginning of the World War the Austro-Hungarian forces sought to advance into Serbia across the Drina and the middle Save. After hard battles the Serbs were driven beyond the Kolubara. On 2 December the east Austro-Hungarian column, advancing south of the Save, occupied the undefended capital of the Serbs. As a result of the battle near Aranzjelovac, the Austro-Hungarian army was forced to withdraw from Serbia and by the middle of December, Belgrade was again in Serbian hands. As the retiring commander, Potiorek, turned over his command to his successor, he remarked, "If you have to attack the Serbs again, attack only at Belgrade."

In 1915 plans were prepared for an offensive against Serbia, in order to open the land route to Turkey. The Austrian Fifth Army command was to advance, employing one army to cross the Save between Kupinovo and Ustruznica and advance into the Kolubara valley: employing a second army to cross the Danube between Pancsova and Temes-Kubin, to advance along the Morava valley and open the route to the south. It was believed that these operations would cause the fall of Belgrade without direct attack. However, Italy's entrance into the war caused the abandonment of this plan.




Theater of Operations, Serbian Front, 1915. Map No. 1

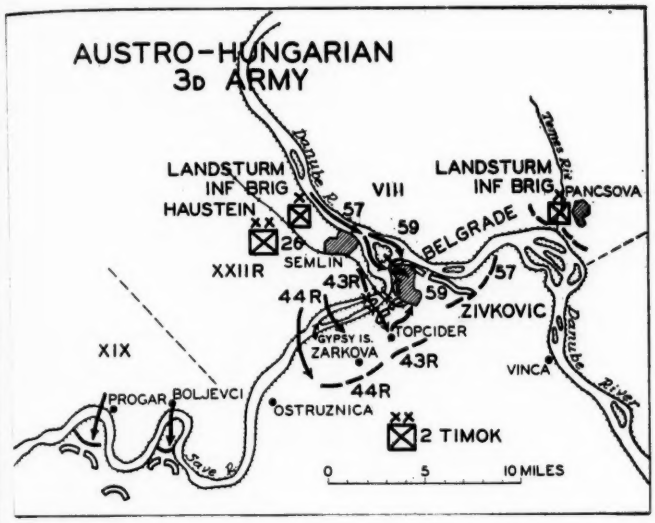
After the successful engagements against Russia and after the Bulgarians had cast their lot with the Central Powers early in September, a decision was made to attack Serbia.

For this purpose the following forces were assembled under the command of Field Marshal von Mackensen: the Austrian Third Army, under General Kövess, had the mission of crossing the Save between Kupinovo and Semlin; the German Eleventh Army, under General von Gallwitz, had the mission of crossing the Danube between Semendria and Bazigs; the Bulgarian First Army had the mission of advancing from Caribrod and north thereof towards Nis. The Bulgarian Second Army, now under Field Marshal von Mackensen, was at Strumica and Küstendil prepared to support the operations of the First Army. Weak Austro-Hungarian forces were along the east and southeast boundaries of Bosnia.

The plan for the crossing of the Third Army (Austro-Hungarian) and operations against Belgrade had been prepared by General von Tersztyanszky, predecessor of General Kövess. The 59th Division of the VIII Corps was to cross the Danube by way of the large island northwest of Belgrade and attack the north part of the city frontally.

As soon as the 59th Division had gained a foothold on the south bank of the Danube the 57th Division was to follow by boat. The Landsturm Infantry Brigade Haustein

was to remain initially at Semlin in Corps reserve while the Landsturm Infantry Brigade secured the north bank of the Danube from the Pancsova area. The German XXII Reserve Corps (43d and 44th Reserve Divisions and the 26th Infantry Division) was to cross the Save by way of the Zigeunerinsel (Gypsy Island). The Austro-Hungarian XIX Corps had the mission of forcing a crossing of the Save at the Progar and Boljevci bends. The Danube flotilla had orders to support the attack.




Crossing of the Save by the Third Austro-Hungarian Army, 7 October 1915. Map No. 2

The Serbian army of 275 battalions and 654 cannon was confronted on three sides by an army of 350 battalions and 1400 cannon. In Belgrade itself, General Zivkovic had only 20 Landsturm battalions and 75 cannon against which General Kövess was able to mass 66 battalions and 273 guns, 108 of which were heavy.

On 6 October Austro-Hungarian Landsturm troops advanced across the Drina and the Save. The crossing by the Third Army began before daybreak, 7 October. Heavy artillery preparations and concentrations were to break up hostile resistance while the first echelon crossed in pontons. At Belgrade itself only 14 companies of the 59th Infantry Division were able to gain a foothold, and these were hard put to maintain their position. It was only by the support of flanking fire from the flotilla Monitors that these companies were able to hold what they had gained.

The Serbian Timok Second Division, which had been in reserve, was given the mission of driving the Germans (59th Division) back into the Danube. However, by early morning 8 October, the German force, at the northwest edge of Belgrade, had been increased to 27 companies, and the 44th Reserve Division had gained the south bank of the Save and was advancing, rolling up the west flank of the Serbian position. During the afternoon and evening 8 October, the 43d Reserve Division (German) captured Banova Berg (Hill) while the 59th Infantry Division (Austro-Hungarian) captured the northwest section of Belgrade in bitter hand to hand fighting.

By nightfall on 8 October, the Serbian batteries became silent. During the night General Zivkovic withdrew to the line: Ostruznica—Zarkovo—Vk. Vracar.

Once again, as 126 years earlier, Belgrade fell to Austro-Hungarian troops on 8 October. By noon, 9 October, the Third Army had occupied Belgrade and extended its lines beyond the city.

Meanwhile the German Eleventh Army had effected a crossing of the Danube between Semendria and Ram (Map No. 1). Two bridgeheads were established to serve as bases for the further operations of von Mackensen's army against Serbia and Montenegro, which carried the flags of the Central Powers to the boundary of Greece.

## Conclusion

During the wars of the seventeenth and eighteenth centuries and even earlier, the objective of a campaign was often merely the occupation of a fortified area. In 1688 and 1693 the objective was the conquest of Belgrade, but Prince Eugene of Savoy and Field Marshal Laudon visualized Belgrade as a base for operations against a Turkish army advancing from the south.

In previous sieges, the garrisons of Belgrade were left to their own devices, simplifying the task of the attacker. In the teachings of those times, a river crossing was considered a very difficult undertaking. It was held, as stated in Frederick the Great's *General Principles of War*, and Clausewitz's *On War*, that a river crossing was possible only in the absence of hostile opposition or in the face of very weak opposition. Thus, it may be seen that in 1717, the attackers of Belgrade crossed the river at such a distance as to avoid the Turkish batteries (maximum range, 2200 yards) in the fortress. On the other hand, the crossings could not be attempted at a great distance from the city because the Danube, north of Belgrade, was the line of communications. The Zigeunerinsel (Gypsy Island) facilitated the crossing of the Save, since on all occasions this island was either unoccupied or but weakly held by the defenders and when captured it served to screen further preparations. But the superior Turkish fleet constituted a great danger, and for this reason each of the four royal commanders who captured Belgrade in previous years began their operations with special caution. Each sought to mislead the enemy by disseminating false information. In the plans of Prince Eugene and Field Marshal Laudon we see the genesis of modern river crossing operations.

All of the successful crossings avoided the direct route of the Danube because the confluence of the Danube and the Save lay within the range of the fortress batteries. The attack itself was in each instance launched from the south and executed in accordance with the siege practices of the day. Provision was made to protect the besieging force against a relieving army. The bravery, boldness and self-reliance of Prince Eugene are especially noteworthy.

The attack against Belgrade in 1915 presents a different picture. The Danube and the Save lay before a portion of the Serbian front; it became of prime importance to the attacker (von Mackensen) to drive the Serbs away from the Belgrade—Sofia railroad line—the route to and from Turkey.

In these operations Belgrade played no role as either a fortress or a capital. The area near Belgrade was of tactical importance because of the favorable crossing sites. The Danube above Belgrade had in former campaigns served as the line of communications for the besiegers; in 1915 it

served as a route of approach for the attacker. The Austro-Hungarian VIII Corps, using the large island northwest of Belgrade as a screen, landed its first wave with surprise. The XXII Reserve Corps also found favorable conditions for crossing at Gypsy Island, as the royal army had found 250 years previously.

In the attack (crossing) on 7 October, 1915, the Austro-Hungarian artillery began firing before the first wave was sent over, with the result that the pontons came under severe fire from the Serbians. It would be much better to have the first wave cross quietly and to hold the artillery ready to fire upon the enemy only after he has discovered the crossing and begun to fire upon the boats. The first companies to cross found themselves in a difficult situation and were able to maintain themselves only because of the flanking fire support by the monitors of the Danube flotilla. The Serbs possessed no river boats.

If a large force must in the future make a forced river crossing, it is quite likely that the operations will resemble closely those at Belgrade in 1915, provided, of course, that the enemy is inferior in land and air forces and possesses no river flotilla. If these conditions do not exist, the crossing must take the stamp of a difficult breakthrough wherein the crossing, as soon as it is discovered, may be compared to an attack over a flat terrain without cover or concealment. A river crossing in the face of a determined enemy, ready for defense, should be made only at night or under the protection of smoke, and before it is attempted the hostile flotilla must be destroyed or neutralized and air superiority must be gained in the area of operations.

In so far as engineer matériel is concerned, that which sufficed during the World War does not meet the demands of today. For the crossing of foot troops (by boats) it is too heavy, for the construction of bridges it is too light. For the initial wave of the river crossing a light means is needed, such as the rubber inflatable ponton. On large streams, however, this type of matériel is probably not satisfactory, although in areas where the water flows very slowly it may prove usable. Moreover, light tanks must be crossed early in the operation. Therefore, either amphibious tanks, whose land mobility up to the present leaves much to be desired, must be provided or transportation for light tanks must be available. Heavy bridging material is likewise necessary and must be at hand to construct bridges capable of bearing heavy tanks and heavy artillery. Motor boats with silent motors, when these are constructed and available, will prove a great advancement. On board rivers, ferries capable of carrying the heaviest loads will be found most advantageous. They offer no fixed target to hostile artillery fire or air forces.

During the year 1918 the last great river crossings in Europe took place. A study of the attack by the army group Boroevic across the Piave on 15 June and the advance of the German Seventh Army on 15 July across the Marne will point out the great difficulties inherent in such operations. Although the Piave at its maximum width was but 350 yards wide, varying between 150 and 350 yards, on 15 June it was at high water and flowed at a rate of 4.3 yards per second (about 9 miles per hour). On the other hand, the Marne was but 75 yards wide, quietly flowing, and a much less obstacle than the Piave.

In a future war, the difficulties in forcing a river crossing will increase; the greater the width of the stream, the greater the difficulties. In the construction of military bridges not only will speed of flow play a large role, but the condition of the river bottom will also be of particular importance. The presence of a river flotilla in waters such as the Danube, the Rhine, and the Vistula may be of decisive importance.

The difficulties of military operations always bear the stamp of the time. Military history teaches that every river crossing attempted in the face of the enemy has been successful when thorough preparations have been made and energy and prudence have characterized the execution. Therefore, there is every reason to believe that in the future river crossings will be successful provided proper preparations are made and energetic and determined execution, based on the art and science of war at the time, follows the preparations.

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## LESSONS IN OPERATIONS AND TACTICS OF THE CHINESE WAR

["Operativno-Takticheskiye Uroki Kitayskoy Voyni," by P. Grebnev. Condensed from *Krasnaya Zvyezda*, 8 February 1939.]

By Lieutenant Joseph Dasher, *Military Intelligence Reserve*

*Wide World Photo.*

Japanese Infantry Near Kiukiang on the Yangtze River

The Japanese army has not made a creditable showing in position warfare. In this type of fighting, new to them, the Japanese command has not demonstrated any unusual talents nor has it shown anything new in tactical operations. The doctrine of envelopment leading to surrounding and destruction, which the Japanese had copied from the German field manuals at the end of the nineteenth century, has been applied against the Chinese. Not once have the Japanese deviated from this method. The failure of this system has been demonstrated by the total inability to effect a decisive encirclement of Chinese armies. By numerical superiority alone, the Chinese have been able to prevent their foes from surrounding them on many occasions. Once again does the

Chinese war teach, that a modern army must be equally skilled in maneuvering, and in methods of frontal attack designed to break through an enemy's fortifications, when it is impossible to outflank him. In this regard, the Japanese showed serious deficiencies, especially early in the campaign, at Shanghai, where, in spite of great technical superiority over the Chinese, they were unable to gain a decision for three months, and in addition suffered heavy losses. That the Japanese have learned, that troops with inferior equipment but strong in morale can show great defensive abilities against a stronger and better equipped adversary, is demonstrated by the fact that the new Japanese Field Regulations (1938) contain departures of their former viewpoint on defensive operations.

### *Infantry*

The Chinese war once again shows that infantry is still the basic arm. The bayonet and hand grenade are decisive in hand-to-hand combat. Need is seen for increasing the number of grenade throwing devices in infantry units. The mine thrower has been found very useful in fighting for possession of fortified, populated points. Due to topographical conditions, the heavy equipment, including battalion, regimental and antitank artillery, had to be transported by means of the pack method. The advantage of mobile infantry was demonstrated by the Chinese, whose lightly equipped units were able to execute longer marches than the Japanese infantry. The latter, despite previous intensive training, was unable to exceed 25 miles a day for the regiment or brigade, and usually covered but 12 to 18 miles.

### *Cavalry*

Horse cavalry is of vital importance in a theater of war like China, where terrain difficulties often preclude the employment of mechanized units. Aerial reconnaissance over wooded and mountainous terrain is frequently impossible. Here, too, horse cavalry must be depended upon. Although both the Japanese and the Chinese have been using cavalry, there have been no important engagements between cavalry units, except during operations in Inner Mongolia, were the open terrain required the use of highly mobile units. The experience in China demonstrates that cavalry units must command greater independent strength than that of the Japanese cavalry, which lacks sufficient machine guns, artillery and motorized equipment.

### *Artillery*

Because of the terrain, the mountain gun and the howitzer are widely used. Japanese divisions lacking mountain artillery within their organizations, have been reinforced by mountain artillery battalions and regiments. Weakness of artillery support has been frequently the cause of Chinese failures. The Japanese command has found it necessary to provide infantry with strong artillery reinforcements. Japanese infantry is supported not only by the light field artillery, but also by the heavy 150-mm howitzers and 105-mm guns. Heavy siege artillery is frequently used for demolishing Chinese fortifications. Grenade projector units have been organized in batteries and battalions, reinforcing Japanese infantry divisions, regiments and battalions. Artillery action is always accompanied by aerial bombardment. Pack artillery has proved to be most practicable because of terrain difficulties.

### *Tanks and Mechanized Units*

The Japanese have used in China mostly the medium 14-ton tanks, and the 3-ton "baby" tanks. Separate tank battalions and companies were formed at the beginning of the war. These were placed at the disposal of army command, or were used to reinforce divisions. Tanks were used with success at Shanghai in November 1937, and at Nanking in December 1937. The "baby" tanks, with armored trailers, have been used by the Japanese for bringing up ammunition to the front lines. Japanese moto-mechanized units were in evidence principally in Inner Mongolia, where they were part of the Kwantung operations group.

### *Chemical Warfare Troops*

In the Japanese army separate chemical companies were placed at the disposal of army command. They were equipped for smoke screen or gassing operations. Such companies, either in full complement, or by individual platoons, were attached to divisions. Besides, separate chemically trained detachments were to be found in infantry and cavalry regiments. In each company or squadron there were up to 10 men trained for chemical work. Non-persistent, irritating agents were generally used. Smoke screens of neutral smoke, sometimes combined with poisonous smoke have been widely used by the Japanese.

### *Aviation*

The importance of possessing mastery of the air was demonstrated in China. At the same time the theory of some strategists as to the winning of war through mass aviation alone, has been thoroughly discredited. Japanese army aviation, equipped with aircraft of obsolescent models, was unable to cope with the Chinese, when the latter were using some of their most modern ships, acquired in foreign countries. For this reason, long distance air missions, and combat with the Chinese air forces were entrusted to the Japanese naval aviation, which was better equipped. Weaknesses in the basic organization of the Japanese air force were disclosed, forcing the Japanese command to effect considerable reorganization. Supplanting the former air regiment, separate air battalions were organized, consisting of 30 to 40 ships, and divided into several companies. The effectiveness of antiaircraft artillery forced flying at high altitudes, presenting new problems in the conduct of aerial reconnaissance due to visual limitations, and difficulties in bombing. The effectiveness of the latter was seriously reduced because of high altitude flying. The vulnerability of unprotected airdromes raises problems which should be seriously studied.

# FRENCH PRINCIPLES FOR THE EMPLOYMENT OF MECHANIZED AND MOTORIZED UNITS AND THE DEFENSE AGAINST THESE UNITS

(Part II)

["Französiche Grundsätze über Verwendung mechanisierter und motorisierter Einheiten und der Abwehr dagegen." Condensed from *Die Kraftfahrkampftruppe*, August 1938.]

By Captain H. N. Hartness, *Infantry*

## Tanks with the Army, the Corps, and the Infantry Division

In general, army reserves consist of motorized and mechanized units from GHQ reserves, and especially of tanks and antitank weapons.

The Army commander issues orders to the tank troops of the army.

Tanks employed by the army in counterattack should be so employed that they strike the hostile armored vehicles. The cavalry and armored vehicles are especially suitable for rear guard action.

The Army Corps can employ the allotted tanks, which are particularly suitable to combat hostile tanks, either by assigning them to front-line divisions or retaining them in Corps reserve.

Whenever possible, the initial attacks of the corps should be supported by tanks.

The Corps allots armored vehicles of all kinds to the divisions. However, tank elements should be held in reserve by the Corps. In the distribution of the tanks to the division, the missions and the terrain must govern such assignment. The Corps commander determines the time at which accompanying tanks join the divisions. Sometimes in order to assure the uniformity of their employment the higher commander will direct the front on which these accompanying tanks will be employed.

Counterattacks, executed by divisions in reserve, are launched on command of the higher commander. He reinforces these counterattacks with air, tank, and artillery units.

## Tanks with the Infantry Division

When the division is reinforced by tank units, a tank commander is specifically named. This commander, in accordance with the orders of the division commander, makes allotment of the accompanying tanks to the subordinate infantry units. During combat this tank commander commands, under the division commander, the "tanks under the command of (the division) commander" which are engaged as well as those held in reserve.

### (a) *Attack*

In the initial attack it is desirable that the division have tank support.

In general, a division making an attack will be reinforced by tanks of all kinds.

For the attack the division will be formed in attack echelons as follows:

1. Infantry units and accompanying tanks, so strong as to assure fire superiority.

2. "Tanks under the command of — commander," held as a striking force driving forward against objectives beyond the infantry and the accompanying tanks.

The infantry units and the accompanying tanks will be organized into mixed commands, which will be employed side by side or as individual units separated one from the other. Each mixed group of tanks and infantry will have a common commander, who will receive a positive mission from the division. When "tanks under the command of — commander" advance in front of the mixed infantry and accompanying tank units, close cooperation between these advanced tanks and the artillery must be assured. The fire of the artillery supporting these tanks will be in accordance with a fixed plan or in accordance with the needs of the infantry or of the tanks. The division reserve is composed of infantry and tanks.

The accompanying tanks will be assembled as close as possible to the infantry, if their lack of speed does not permit them to assemble sufficiently far back and escape hostile artillery fire.

When the hostile defensive position is flanked and protected by obstacles which the tanks cannot cross, or when the hostile position is so strongly organized that the tanks with their own means cannot take the position, routes for the advance and attack of the tanks must be prepared by very strong artillery preparation.

Supported by the heavy fire of all available artillery and automatic weapons, the mixed infantry and tank units attack at a specified time or upon an agreed signal. The accompanying tanks fight in the front line of the infantry or just forward of the forward infantry elements.

The infantry advances rapidly in the direction of its objective, executing its combat in close cooperation with the accompanying tanks. It utilizes every success of the tank. It assists the tanks by fire against hostile antitank weapons. When the Corps Commander allots to the division, tanks for use as "tanks under the command of — commander," the division commander assigns missions and zones of action for these tanks. Above all else, he must assure cooperation between these tanks and the artillery. These tanks operating under the division commander and echeloned in depth seek to beat down the hostile weapons which are holding up or will hold up the advance of the mixed commands of infantry and accompanying tanks. Insofar as the terrain permits, they precede the infantry units, and thus augment the artillery support given the infantry. It must be borne in mind, however, that these tanks advancing to the front require effective support of the other arms. Often their advance must be preceded by an artillery preparation.

The exploitation of each success is fundamentally the mission of the first-line troops. Insofar as possible these troops will be reinforced by additional troops and means, especially tanks whose employment at a particular time will promise great success. In the pursuit, cavalry and mechanized and motorized units should be employed at the earliest possible moment. The division commander quickly forms strong advance guards, reinforcing these especially with armored vehicles, artillery, and engineers.

#### Cooperation of the Artillery

If accompanying tanks only are employed, supporting and protective fires from the artillery must be so laid as to

facilitate the advance of the tanks, which means also the advance of the infantry.

If "tanks in the hands of the — commander" are also employed and these tanks as employed are to precede the infantry and its accompanying tanks, the artillery must provide protection for the forward elements of these tanks. This protection is provided by directing that a certain amount of the artillery fire in direct support of these forward tanks. Provision must be made that artillery give adequate support to the infantry when these forward tanks no longer provide immediate support for the infantry and accompanying tanks.

During the preparation fires, the maximum fire must be laid on the hostile antitank weapons, even when the exact positions of these weapons are not known. That in turn means that the most probable locations of hostile antitank weapons and hostile artillery, in addition to those actually known, must be fired upon.

The close support artillery fire accommodates itself to the hostile situation and position and fires immediately upon all recognized antitank arms. During the time that the mass of the artillery is displacing, it may be advisable to use the available tanks to bridge over this decreased artillery fire.

The more distant artillery fires, interdiction, etc. must combat the antitank weapons echeloned to the rear and must fire upon those areas suitable for antitank weapon employment.

The cooperation between artillery and infantry is secured by frequent contacts between the commanders, by placing the command posts of the artillery and infantry near one another, by liaison details, and by advanced observers.

Attack against a Position

The employment of strong tank units has the advantage that these units can be launched immediately against distant objectives. For such employment the tanks must be able to reach their objective without having to pass or cross over major obstacles, and the most dangerous hostile zones of resistance must be neutralized or avoided. Often the tanks can be employed only after an obstacle in the immediate front is crossed and secured by the infantry.

(b) *Defense*

If the attacker breaks into the position, the division reserves will be employed in counterattack. Opposed by an enemy who has armored vehicles, the employment of armored vehicles by the defender in the counterattack is essential. Preparations for such an attack must have been made beforehand.

Delaying Action or Retirement

Shaking oneself loose from the enemy by day is possible only under the most favorable circumstances, for example, in fog, in artificial fog, or by the employment of mechanized units.

During the retreat, rear guards are provided with tanks.

PRINCIPLES FOR THE EMPLOYMENT OF LARGER CAVALRY UNITS

*Characteristics of Cavalry*

Cavalry is the arm of movement. It can most rapidly displace its fire power. Cavalry reconnoiters, protects, and fights in conjunction with the other arms. Horse, motorized, and mechanized units belong to the cavalry. Ordinarily the horse and motorized units fight on foot. They are armed as is the infantry. The mechanized units are equipped with machine guns and rifles under armored protection and have radio at their disposal.

Since the large cavalry units are mobile and are richly equipped with fire weapons, and especially with armored vehicles, they can, in common with the other large units, intervene with rapid powerful strokes in the battle or they can be held back in reserve.

The cavalry is composed of large independent units, cavalry divisions, cavalry corps, and light mechanized divisions. Reconnaissance battalions, as security and reconnoitering elements, belong to these large units.

Large cavalry units are characterized by their mobility and fire power. The degree of their attack power corresponds to their equipment with artillery and tanks.

During operations the various elements of the large cavalry unit must be led as units, that is, mounted, horse-drawn, motorized, and cavalry tank units.

Cavalry must utilize its mobility in order to strike the enemy at his sensitive area. In many situations this striking must be simultaneous from the front and from the flank.

The power of the attack of the cavalry corps depends upon the kind and the number of the divisions and reinforcements which compose the corps. According to the situation and the employment of the corps, it may consist of cavalry divisions, light mechanized divisions, motorized infantry divisions, and infantry divisions.

*The Cavalry Division*

The mission of the cavalry division is reconnaissance, security of other units, and combat in conjunction with the other arms.

Orders to the cavalry division must state: mission, direction of employment or zone, objective, which is to be reached by a specified time, reconnaissance (when and where to report results), and conduct on contact with the enemy.

The organization of the cavalry division depends upon its mission, the terrain, and the situation. In favorable terrain and with adequate maneuver space, motorized units are especially desirable, since these units can quickly gain contact with the enemy. In such situations the horse elements follow as quickly as possible along the roads. In difficult terrain and at shorter distances from the enemy it is better to employ mounted units in the lead. Cavalry tanks should be allotted to these units and the remaining motorized elements should follow in the second line.

The necessity of echeloning the elements of the division in depth and also of avoiding a mixing of the motorized and mounted units leads to a distribution of the cavalry division into tactical groups, whose organization depends upon the situation.

The attack of the cavalry division will be supported by all of the artillery and the cavalry tanks.

In the defense, mobile reserves will be held out. These reserves consist of troops on cross-country motor vehicles, of cavalry tanks, of tanks and motorcyclists.

In the retreat the cavalry division protects itself by rear guards, reinforced by armored vehicles.

*The Light Mechanized Division*

(a) Characteristics, capabilities, and missions

The light mechanized division is characterized by its mobility, its great radius of action, and its armor protection.

The light mechanized division is equipped with all means necessary for the execution of reconnaissance at great distances. It is capable of providing its own security. It is especially suited for the execution of reconnaissance and security for large motorized units.

Its numerous armored vehicles permit it to make, during the attack, powerful and surprise thrusts. Because it is so richly equipped with automatic weapons it can be effectively used in the defense.

Its combination of motorized and mechanized elements suit it for many tasks. The motorized elements can quickly lay down a curtain of fire, can support the attack of the mechanized vehicles, and can occupy the terrain seized by these vehicles. The mechanized elements comprise the rapid thrust power of the division. These elements are employed only in the attack and in the counterattack. But in both they must be supported by the fire of the automatic weapons, by artillery, and by air units against the hostile antitank weapons. The success of the division is complete only when the motorized forces occupy the terrain which has been seized.

In order to utilize its characteristics effectively in the attack and in defense, the light mechanized division, more than any other unit, must be able to assimilate and employ reinforcements in accordance with the situation.

Reinforcements it will receive are primarily:

In the defense:

Antitank units;
Artillery;
Infantry, and especially machine-gun battalions.

In the attack:

Combat aviation and tanks;
Motorized artillery and motorized infantry.

In order to function properly the division must be adequately equipped with signal means.

Primary missions of the light mechanized division are:

1. Reconnaissance for larger commands.

The light mechanized division can reconnoiter a front 40-60 kilometers (25-40 miles) wide to a distance of 100-150 kilometers (60-90 miles) and at a speed of 15 to 20 kilometers (9-13 miles) per hour.

2. Security.

*a.* During the initial phases to cover the concentration;

*b.* As reserve of the covering forces;

*c.* During the operations, to cover the movement of motorized forces, both to flank and to the front, either in the attack or defense.

3. Participation in combat.

(b) Principles for the employment of the light mechanized division

After the breakthrough the light mechanized division can be advantageously employed against the rear elements of the enemy, or can be employed to envelop a hostile flank. Such employment must be coordinated with a further attack of the other large units.

The chief characteristic of the mechanized division, its speed, is best utilized in the pursuit.

The speed of the light mechanized division must be exploited in the attack. The attack is launched from an assembly position, protected by the motorized elements of the division. The attack is supported by artillery fire. Should surprise be achieved it is often advisable to send the armored vehicles forward in a quick powerful thrust and without the support of the other arms.

In defensive situations the light mechanized division is suited for the execution of delaying action; initially it may be held in reserve, to be employed later to fill a gap or to execute counterattack.

The principles underlying the employment of the light mechanized division are the same as those applying to the cavalry division. A fundamental difference exists in that the mechanized division must be employed in a larger area and for a shorter period of time. Therefore all decisions must be simple and quickly made.

In the offensive the division commander employs his reconnaissance and security measures according to the situation, the stronger and faster moving the mass of his troops the more rapidly must the reconnaissance be executed and the more distant must be the security forces.

The organization for the march must be such that the light mechanized division can enter into combat without loss of time. Traffic regulation is therefore necessary. The division is organized into tactical groups, which in turn demand a temporary grouping of units of various elements of the division under one commander.

The division commander always provides for a reserve. In all situations he provides for the occupation of a rearward position on which the leading elements can retire.

In the defense the light mechanized division is capable of providing rapidly a fire curtain with which to hold up or delay the hostile advance.

PRINCIPLES FOR THE EMPLOYMENT OF LARGE MOTORIZED COMMANDS

*Organization and Characteristics*

Fully motorized corps troops and motorized infantry divisions belong to the large motorized units.

Based on war tables of organization, corps troops possess sufficient motorized vehicles to transport all of their units; motorized infantry divisions have at their disposal, however, means of transport for part of a division only. It is therefore necessary that additional transport means be provided the motorized infantry division.

Strategic mobility is a characteristic of these units. Employed tactically they have the advantage of being able to execute reconnaissance rapidly, of installing the necessary signal communications quickly and of bringing artillery into the combat rapidly. Motorization also permits the supply of these units from distant bases. On the other hand, motorization imposes certain limitations on these units. Because they must, as a rule, travel on roads and because of their great march lengths, they are extremely vulnerable. They can not provide their own security.

General considerations:

*a.* Large motorized units give the high command a reserve with exceptionally great strategic mobility,

*b.* Commanders of all grades must be familiar with the employment of the motorized units,

*c.* The main body of large motorized commands can be moved only when protected by sufficient security forces, when this security both to the front and to the flanks is assured,

*d.* After unloading, the employment of these forces in battle is the same as that of non-motorized units.

### *Missions and Employment*

In combat large motorized commands form strong mobile reserves, which for the continuation or the completion of an attack, for the extension of the front or for pursuit, are necessary.

In unoccupied areas these units are able to occupy terrain favorable for future operations before the enemy can reach this terrain, they can envelop an enemy, they can cover the concentration and they can strike against the hostile line of communications.

Behind the line occupied by friendly forces the march and unloading of these motorized commands can be carried out without the special security measures; in other situations the movement, the halt and the unloading must be protected, both in front and in flank by other units.

### *Leadership*

Leadership of a motorized group is similar to the leadership of any other group. The commander must be able to adapt himself, however, to quick changes in the situation. At a given moment he must act quickly without making false decisions and without causing long delays of the march column.

Consequently, the early employment of reconnaissance means far to the front and flank is necessary. Rapid and simple decisions are necessary in all actions of the motorized units.

The commander must be far out in front of his main body. Orders must be brief. Lower commanders must exert independence of action within the limitations of their missions.

### *Reconnaissance and Security*

During movement in unoccupied terrain reconnaissance is performed by the air service and the large cavalry units. Security is provided by the reconnaissance battalions of the large cavalry units, by advance and flank guards, all of which must cooperate.

During the march, at halts and when unloading, security must be provided. Motorized groups must occupy by bounds favorable terrain features to protect the movement of the main body. Bivouac areas and unloading areas must be protected by these advance security elements prior to the time these areas are reached by the main body.

Advance guards and flank guards have not only the mission of close security, but to a certain extent that of distant security:

*a.* In order to support the large cavalry units in the defense at suitable terrain features and in accordance with the situation,

*b.* To increase the depth of the security.

Advance guards and flank guards proceed under the protection of the reconnaissance battalions of the large motorized units and conduct themselves in accordance with information of the enemy. The commander of the group reinforces, as necessary, the reconnaissance battalions with motorized infantry, tanks and antitank units. Engineers should also be given the reconnaissance battalions to remove obstacles and reconstruct and repair crossings. Behind the security forces move elements charged with traffic regulation.

### *March*

As soon as the security forces have established themselves along the line of security the mass of the large unit can enter this protected quadrangle. The security measures must be such that they prevent a sudden unexpected clash of the two forces, in order that the speed of the vehicles may be utilized to the maximum.

Preparations for the march must be made and should provide that—

*a.* Roads are fully utilized in order to avoid congestion on one or two routes,

*b.* The organization of large groups, which are flexible and with the minimum vulnerability,

*c.* That the combat troops be relieved of the rear echelons which are not needed forward in battle,

*d.* And that careful regulation of the traffic and the strict insistence on march discipline assure an orderly, well regulated march.

The organization of the march columns is made either in tactical march groups in which are to be found all arms, or in march groups of the same arm, with the same rate of march. The first type of march group, that is, a group of all arms, is necessary in the formation of security detachments. The second will be employed in general for large units and for the main body.

Large motorized units occupy great areas and much road space. They are easily seen and highly vulnerable. A march near the enemy during daylight will be possible only with adequate antiaircraft defenses. Echelonment in time and space will also be necessary. For the main body the night march will often be most suitable. When such a march is made the march should be completed by the main body prior to daybreak.

### *Assembly Position*

In spite of effective security measures against air and ground enemies the movement into the assembly positions is the most difficult operation in the approach toward the enemy.

As a rule the main body may be unloaded only out of the range of the hostile long-range, medium artillery, and under cover of darkness or terrain features.

If it is unloaded the main body is set in march toward the area where its employment is desired.

### Mechanized and Motorized Units in Combat under Special Conditions and the Defense against these Units

#### *Combat at Water Courses*

(a) River crossing.

Swimming tanks are able to cross the deepest water courses under their own power. However, primary reconnaissance and in some situations the preparation of areas of entry into the water are necessary. Many factors will limit the areas at which such tanks can enter the water. The attack of a river line is made as follows: Crossing of the leading elements, consisting of cavalry or infantry, of small tank units and artillery employing ferries and rafts or footbridges; then follows the bridge construction, or the repair and reconstruction of existing partially or wholly destroyed bridges; and finally, the main body crosses. To the leading elements must be allotted sufficient antitank weapons.

Both swimming and other type tanks, taken across under their own power or on rafts or ferries can, in many instances, materially assist in extending the initial bridgehead.

Of special importance is the defense of the crossing areas against air and tank attacks. Artificial smoke is an effective means for this purpose.

(b) Antitank defense.

The antitank defenses along a river will be reinforced at those areas which are most favorable for the crossing of swimming tanks. The natural obstacle of a river can be strengthened by the damming of the water course, by destroying fords, by the erection of tank obstacles, by laying contact mines, and by the construction of wire entanglements on the defender's side of the river. The antitank defense in the defense of a river line must also be organized in depth in order to be able to combat those tanks or mechanized vehicles which have penetrated the forward lines.

#### *Woods' and Towns' Fighting*

Woods and towns form natural strong points on which the defender can build up his defense against hostile tanks and mechanized vehicles, and in which he is protected against both air and ground observation. Reserves of infantry and tanks are held in readiness by the defender in order to prevent a hostile envelopment.

In the attack against woods and villages or towns or cities, the employment of tanks to seize the forward edge of these localities will prove advantageous. Having seized these forward edges they will then engage in combat individually, or in small groups, accompanying the infantry elements. These tanks advance along roads and available avenues of approach and can provide strong support to the infantry.

#### *Combat During Darkness*

The possibility of employing mechanized units during darkness is limited. The fire power of these elements is materially reduced because of lack of observation. Darkness, however, does favor surprise.

Night marches decrease the speed of motorized units, in fact to about one-third that obtainable by daylight.

In close proximity to the enemy, darkness will often be utilized for the completion of the approach march, and the asembly for the attack.

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## RUSSIAN PRINCIPLES FOR THE EMPLOYMENT OF TANKS AND MOTORIZED UNITS AND THE DEFENSE AGAINST THESE UNITS

(Part II)

["Russische Grundsätze über den Einsatz von Panzer-und motorisierten Verbänden und der Abwehr dagegen." Condensed from *Die Kraftfahrkampftruppe*, December 1938.]

By Captain H. N. Hartness, *Infantry*

### Mechanized Units

#### *The Organization, Characteristics and Missions of Mechanized Units*

Mechanized units consist of tanks, self-propelled artillery, infantry on motor vehicles and the necessary engineer, signal and supply elements.

Their characteristics are great mobility, tremendous fire power and shock action.

They are capable of executing independent missions and also of operating with other arms and units.

The basic type of combat is the tank attack.

The attack should be supported by coordinated artillery fire; movements and the attack must be supported by air units.

Reconnaissance is executed by the organic reconnaissance elements, augmented by special reconnaissance battalions.

#### *March*

As a rule, marches will begin at night or during weather of low visibility. The rate of march will vary between 8 to 13 miles per hour.

#### *Employment in Meeting Engagements*

In the meeting engagement the encirclement and destruction of the enemy shall be the goal, and for this purpose mechanized units should be employed against the hostile flanks and rear.

Therefore, on the march, the mechanized units should be so disposed as to permit their early employment against that force, which the commander desires to destroy first.

The mechanized brigade, supported by reconnaissance planes and by attack planes, advances rapidly and attacks the main hostile infantry (or cavalry) and its artillery.

The meeting engagement makes great demands on the leaders and personnel of mechanized units (50-62 mile night march followed by combat the next morning).

In meeting engagements cavalry should not be employed in those directions from which it can be attacked by hostile mechanized units. However, in combat with mechanized units, the first mission of the cavalry is to capture the transport means of the mechanized unit.

*Employment in the Attack*

In a decisive attack to drive through the hostile position, the mechanized units, in cooperation with the other arms, should be launched against the hostile rear elements. In an envelopment, mechanized units should be employed on the outer flank.

Mechanized units promise great success in plains fighting.

*Employment in the Defense and in Retirement*

Available mechanized units should be employed against the flanks and rear of advancing hostile columns.

MOTOR TRANSPORT

Motor transportation is employed to regroup units, to gain time and to minimize foot marching requirements.

The minimum distances over which units should be moved (economically as to time and space) by motor transport follow:

An infantry battalion or artillery battalion: 9 to 12 miles.
An infantry regiment: One day's march.
An infantry division: One and one-half to two days' march.

As a rule, the infantry battalion and the infantry regiment will be moved as a whole; the infantry division, less its service elements.

The distance over which a division is most favorable and economically moved: 124 to 248 miles.

The rate of march of a motor transport column averages 9 to 16 miles by day, somewhat less by night, even with lights. This rate can be increased on through routes and with smaller columns.

The average requirements in motor vehicles for movement of all elements simultaneously are:

Infantry battalion and a regimental battery: 100 to 120 one and one-half ton trucks.
Artillery battalion: 180 three-ton trucks.
Infantry regiment: 700 one and one-half ton trucks.

During the march the motor transportation is under the command of the unit being moved.

The preparations for the movement by motor transportation of a unit require:

*a.* Determination of the march requirements of the troops; determination of the order of march, of security measures, of supply, medical and veterinary needs;

*b.* The reconnaissance, preparation and allotment of loading and unloading areas;

*c.* Reconnaissance of routes, traffic and communication control, repair of roads and bridges;

*d.* Assembly of the transport columns, procurement of gas and oil, equipment of vehicles with the necessary additional means required for the particular type of load.

Each infantry and artillery battalion staff will prepare a plan showing the location of the trucks during the loading and the type of trucks used.

Each regiment and division will prepare: necessary orders; a computation of the trucks necessary; a sketch showing the truck column and the location of units in the column and a time table of the movement.

Special instructions concerning antiaircraft, gas and antitank defense and concerning signal and supply services must be issued.

As a rule, each battalion, infantry or artillery, should be assigned a separate loading area. The loading area of a battalion is about one by one and one-half kilometers.

During daylight an infantry battalion requires 40 to 60 minutes to load; an artillery battalion requires 60 to 90 minutes. At night these times are increased about 15 minutes each.

The order of march of the units within the motor column should:

*a.* Be based on the mission, the situation, the terrain conditions and the intended plan of operations;

*b.* Assure the maximum efficiency of all transport means;

*c.* Guarantee the cooperation between all staffs and troops within the column;

*d.* Permit the change of direction of march and destination of *units.*

Large commands should be transported in echelon over several routes, the columns disposed in breadth and depth. Tactical units should be moved as units, including their supply services and any reinforcing means.

Reserve trucks, supply and repair units follow each echelon.

Security of motor transport columns follows the same principles as apply to the security of foot troops on the march.

Ordinarily there should be an interval of 25 to 50 yards between vehicles, an interval (distance) of 1 to 3 miles between infantry battalions.

A halt of 10 to 15 minutes every two hours is normal. On marches over 75 miles and up to 95 miles a long halt of 2 to 2½ hours should be made during the march, in order to give the equipment a thorough check-up, rest the personnel and care for the animals.

Proper command and leadership during the march will be technically assured by the following measures:

*a.* Careful organization of the communication service:

(1) Utilization of existing commercial lines;
(2) Radio signals;
(3) Communications and control planes;
(4) Liaison and staff officers on motor vehicles.

*b.* Establishment of a traffic control system:

(1) Traffic posts.
(2) Time table of movement.

*c.* Selection of the exact location of message centers and temporary command posts and providing all concerned with

this information. The location of each commander in the column should be known to all concerned.

When contact with the enemy is imminent a column commander should ordinarily be with the advance guard.

The provisions applicable to loading areas apply in general to unloading areas. After the unloading, each echelon of motor vehicles will move directly to its bivouac area in order to free the roads for further traffic.

The time required to unload an infantry battalion during daylight: 15 to 20 minutes; to unload an artillery battalion: 30 to 40 minutes. For night unloading add 15 minutes.

Loading and unloading areas will be carefully camouflaged and protected by antiaircraft artillery and machine guns, by pursuit planes and all available gas defense means.

On the march a motor column obtains antiaircraft protection by:

*a.* A proper distribution of all antiaircraft weapons with the column;

*b.* Setting up on antiaircraft mounts the organic machine guns of the transported troops;

*c.* Emplacing the antiaircraft batteries and machine guns at particularly vulnerable areas, prior to the arrival of the column(s);

*d.* Maintaining an adequate and efficient air reconnaissance and air warning service;

*e.* Patrolling by pursuit ships over the area of the march.

Gas defense demands a gas defense plan and the presence in the column of degassing means. Each echelon or group of echelons must be provided with trucks transporting degassing material.

The antitank defense of the column on the march is obtained by distributing especially designated antitank gun units within the column. Should a hostile mechanized or tank force attack, these antitank units move out of the column, take position close by and open fire. If mechanized units are accompanying the column these are employed against the hostile mechanized force.

## The Antitank Defense

### *Organization of the Antitank Defense*

In every situation antitank defense must be carefully considered and planned.

The antitank defense consists of:

*a.* Observation and warning system;

*b.* The suitable distribution of the antitank guns, both regimental and divisional, based on a carefully considered defense system;

*c.* Tanks in counterstrokes;

*d.* Special measures to protect personnel, by both natural and artificial obstacles;

*e.* Reconnaissance and security measures to prevent surprise attacks by hostile tanks.

### *Observation and Warning*

The antitank observation and warning services are performed by the antiaircraft warning service, by observation planes and by the organic means of the troops concerned. Any of these agencies will immediately give the signal "Tanks" as soon as hostile tank movement is observed.

The radio stations (sets) charged with the reception of tank warning signals form a "warning radio net" and maintain continuous service.

In order to pick up alarm signals from neighboring divisions and from radio sending apparatus operating on a frequency other than that used in the warning service of the division, the division or individual large column will set up two sets to receive antiaircraft and antitank signals sent by neighboring divisions or large columns. Upon receipt of these signals, the receiving stations will immediately transmit the warning to all elements of the division or column.

The warning will be given by previously arranged signals, for example:

1 = north
2 = west
3 = south
4 = east
12 = northwest
34 = southeast
32 = southwest
14 = northeast, etc.

The numbers indicate the direction from which the tanks are approaching. Since the signals are used for both the antiaircraft and the antitank warning service, the letter "T" is prefixed when the antitank signal is sent.

### *Antitank Defense on the March*

The commander of the column is responsible for the disposition of antitank means and the maintenance of the warning service.

The passage of defiles must be protected by concentrated antitank weapons.

Flank and rear guard should be provided with antitank guns.

Upon receiving the signal "Tanks" the troops on the march will adopt the following measures:

*a.* Infantry, cavalry and vehicles will move rapidly to the nearest area secure against tank attack (woods, ditches, villages, etc.).

Heavy machine guns and sharpshooters go into camouflaged positions immediately in front of their units and at a range of 200 yards and less open fire at the slits in the hostile tanks.

Grenade throwers take covered positions in front of their units.

*b.* All the artillery (with the exception of heavy batteries) moves toward the threatened area and goes into firing positions. The batteries will be so echeloned that rapid displacement of fire can be made in any direction.

After the hostile tank attack has been repulsed or the threat did not develop into an attack, the signal "Assemble" is given, the troops take their original positions in the column and the march is resumed.

The defense of motorized columns is obtained by a judicious distribution of antitank guns in the column. Should a tank attack impend, these move out of the column, take position and open fire on the approaching tanks. If mecha-

nized vehicles accompany the column, these are also employed in the defense against the attacking tanks.

*Antitank Defense in Combat*

In combat both commanders and troops must always be prepared to defend against tank attacks. Uninterrupted observation and warning services are indispensable. The antitank guns must be prepared to combat tanks at all times. When possible the artillery, both field and antiaircraft, should be emplaced in an area secure against tank attacks.

(a) Antitank Defense in Meeting Engagements

As necessary, pioneer troops should be employed to construct obstacles and lay out defensive areas.

In the meeting engagement the commander must be prepared to meet surprise attacks by mechanized forces. Therefore, the antitank units must be prepared at all times, both on the march and during the development and combat to meet these attacks. The observation means should be increased on the open flank(s) and in those directions from which tank attacks are most probable.

All the artillery, as well as all antitank guns, participate in the defense against tanks, in order to remove this danger as quickly as possible and regain freedom of maneuver.

(b) Antitank Defense in the Defense

Natural and artificial tank obstacles must be employed to the maximum by the defender.

The defender must stop the attack of a superior force. He must so organize his position that:

(1) The attacker's tanks will be unable to break through the position and reach the rear areas;

(2) Should the enemy's tanks break through, they will be stopped and battered by the antitank defense means and separated from the infantry following;

(3) Tanks which do succeed in getting well into the position will be destroyed by artillery and antitank gun fire.

The modern defense is above all an antitank defense, consisting of a fire system organized by the troops and the antitank weapons in conjunction with the maximum use of natural and artificial tank obstacles (mines and other blocks).

Bravery of the defender, skillful use of the terrain in conjunction with flanking fires of rifles and machine guns, the siting of machine-gun elements in the "antitank defense areas" form the basis for a defeat of the attacking infantry and its separation from the accompanying tanks.

A defense organized prior to contact with the enemy or during the course of a retirement should consist of:

(a) A zone of obstacles extending as far as 7 miles in front of the main line of resistance;

(b) Combat outposts—½ to 1½ miles in front of the main line of resistance;

(c) The main battle area;

(d) The rear defense zone—extending 7 to 9 miles in rear of the main battlefield.

An infantry division defends a front of about 7 miles, to a depth of 2½ to 3½ miles; an infantry regiment a front of 1½ to 3 miles, to a depth of 1 to 1½ miles, an infantry battalion a front of ¾ to 1½ miles, to a depth of ¾ miles. However, these frontages and depths vary according to the mission, the terrain and the available antitank weapons.

Every effort must be made to deceive the enemy as to the location of the main line of resistance, the distribution of forces, the antitank defenses and the depth of the defense area. The main line of resistance should be selected so as to give hostile tanks the minimum opportunity to develop under cover; it should lie behind the greatest possible number of natural obstacles; it should favor the erection of artificial obstacles.

The main line of resistance, the reserves and the artillery should all be given the maximum advantage of terrain unfavorable to tank operations.

Within the main battle area "antitank defense areas" will be constructed; these areas will be occupied by shock groups to protect the artillery and command posts. The area lying between these "antitank defense areas" should be covered by strong, direct antitank gun fire.

The antitank artillery along the main line of resistance should be protected by obstacles; in the rear areas this artillery will be emplaced in the "antitank defense areas."

Trenches, mines and other obstacles should be covered by the fire of antitank guns; these guns protected from hostile ground observation.

The location of the main "antitank defense areas" will be decided by the division commander; supplemental "areas" will be located by regimental commanders.

The infantry antitank weapons and the artillery employed for antitank defense should be so located as to make their recognition difficult for the hostile artillery.

To separate the hostile infantry from its accompanying tanks well camouflaged machine guns (initially silent) will be located in the "antitank defense areas," whose mission it will be to use enfilade fire only on the infantry following the accompanying tanks.

The infantry, which has to defend itself against tanks, must recognize and know that the tank is an insignificant threat against the infantryman so long as he remains covered in his trench. Moreover, infantry with its own means is fully capable of successful combat against tanks (hand grenades, etc.).

The defending infantry must always remember that the hostile infantry, following its tanks, constitute the main danger. Therefore, the forces and means must be so distributed that after the combat against the tanks themselves, and without having shown themselves too much, the defending infantry can strike with all its fire power the attacking infantry.

It must be remembered that the tank crew has very limited observation and that the maintenance of contact between tanks and infantry is extremely difficult. These characteristics must be exploited to the advantage of the defender: to separate the tanks and the infantry and destroy the foot troops by fire.

Every artillery battery position should be so selected as to permit a minimum field of fire of 800 meters against attacking tanks. If this basic need can not be met initially, preparations for the rapid displacement of the artillery should be made.

It is especially important that the division and regimental commanders retain a reserve of antitank guns with which to meet the main tank attack.

Antitank means must be given to the outpost troops.

In the choice of rearward positions special consideration will be given to the possibility of antitank defense.

Engineers prepare:

(a) A zone of obstacles in front of the main line of resistance;

(b) "Antitank defense areas," obstacles and mine fields throughout the battle position.

The preparation of artificial obstacles against tanks is a primary mission of the pioneers. The flooding of areas in front of the main line of resistance and in the battle position; the steepening of slopes; the construction and camouflaging of trenches; and the laying of mine fields are important tasks suitable for the engineers.

Dummy obstacles must supplement the actual obstacles.

The division commander designates the "antitank defense areas." Regimental commanders reconnoiter and locate definitely these areas. They also determine the areas in which the artillery supporting, or in, these areas must be prepared to mass its fire should tanks attack; and they give instructions to the commanders of the "close combat" artillery groups for the organization of antitank defense fire to be laid by the "close combat" groups, in coordination with the guns of the regimental and battalion artillery. The battalion commanders assign missions to the "close combat" artillery groups, the minenwerfer and the antitank guns in their areas.

Antitank guns, whose positions have become known to the enemy during the combat, must change their positions.

In order to break up the hostile preparations for an attack the artillery will, upon corps order, fire a counter-preparation, with powerful concentrations on hostile tank assembly positions.

It is the primary mission of the air and ground reconnaissance agencies to determine the strength and the type of the hostile mechanized force, its readiness for combat and its attack assembly position.

The primary mission of a front-line battalion is the maintenance of its "defense area." The battalion commander must have unbroken communication with the artillery supporting him. He exerts every effort to employ his means, especially heavy machine guns in cooperation with the artillery, to the separation of the attacking infantry and its accompanying tanks.

Should the hostile tanks break through the main line of resistance the regimental commander employs all mobile antitank defense means to stop them.

Antitank guns in the "antitank defense areas" remain in these areas and conduct the defense from their positions in these areas.

Should the hostile tanks break into the main battle position, the division commander employs his mobile antitank guns and his own tanks against those of the enemy.

Should strong mechanized forces break through to the rear of the defense, the corps commander must employ every available means to close the gap, to separate the force which has broken through from its supporting echelons and prevent a widening of the penetration.

The destruction of mechanized forces which have broken through is the mission of army reserves and the air force.

Attack and light bombardment planes attached to the corps are employed to attack the hostile tanks.

(c) Antitank defense during the attack.

During the attack it is the primary mission of the antitank defense to protect the decisive effort.

It is especially important to have strong antitank defense means (guns) to protect an open flank and to have a strong reserve of antitank guns.

The reconnaissance battalion (moto-mechanized) and the division planes will be employed against the hostile tank force, with the primary mission of gaining contact and leading the hostile tank force into an area difficult for tank operations, or into one where antitank defense means are strong.

The tank units of the rifle and cavalry divisions will be used to attack hostile tanks which have broken into the attacking units. Air reconnaissance agencies have then the mission of directing the friendly tanks in the most favorable attack direction.

(d) Antitank defense in mountains.

An effective antitank defense system is one which will engage the hostile tanks by fire at the time they begin the ascent.

(e) Antitank defense in villages and towns.

Towns or villages of stone construction are easily transformed into strong "antitank defense areas." Obstacles should be placed across streets.

The town or village should be organized for defense throughout its depth. The main line of resistance should preferably be located within the town so that the buildings along the edge constitute tank obstacles.

*Security of Bivouac Areas Against Mechanized Vehicles*

Cover for the troops and protection by antitank weapons against mechanized vehicles must be provided.

Outposts are provided with antitank guns; the battalion or reinforced company with antitank artillery; the platoon and company with antitank guns.

The distance of the outpost from the bivouac area must be so chosen as to permit the timely warning of the resting troops and permit them to prepare to meet a mechanized attack.

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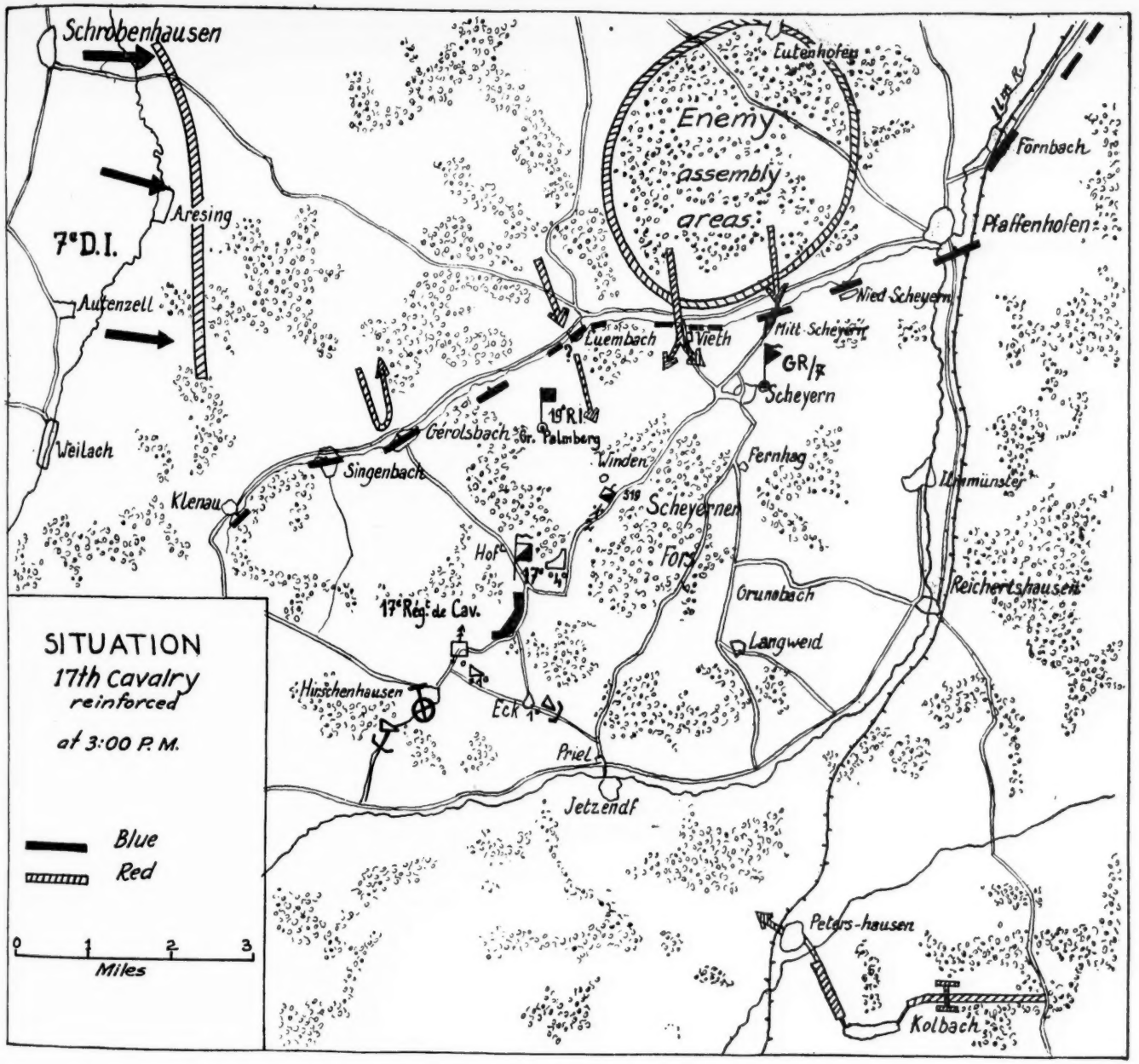
## GERMAN TACTICAL EXERCISE

["Thème tactique allemand," by Commandant Z . . . Condensed from *Revue de Cavalerie*, July-August 1938.]

By Major L. K. Truscott, Jr., *Cavalry*

In a work entitled *Krisen im Gefecht*, Majors Degener and Greiner have studied a number of concrete cases of critical combat situations. It should be interesting to examine one which pertains to employment of a cavalry regiment reinforced by elements of other arms.

The study is in three parts: first, statement of the situation and the tactical problem set forth by the authors; second, proposed solution, comprising three distinct parts—the situation, the decision, orders and reports consequent to the decision; third, a brief summary of German tactical principles applied in the exercise.




GENERAL AND SPECIAL SITUATIONS

## I—GENERAL SITUATION

Blue forces are pursuing a beaten enemy withdrawing to the east. In the course of the combats, the 7th Infantry Division on the south flank is in contact with enemy rear guards along the line: Unter—Weilenbach—Aresing—Schrobenhausen.

Important enemy forces, whose withdrawal to the east is prevented by important Blue forces, are trying to escape to the south. On the Gerolsbach, the following forces bar the way: Tactical Groupment A, consisting of the 7th Reconnaissance Group, two companies of cyclists, one battery of motorized artillery, and elements of a motorized machine-gun battalion, along the line: Nieder—Scheyern—Vieth, and the 19th Infantry, reinforced, along the line: Euernbach—Klenau.

The 17th Cavalry, reinforced, as shown below, at 3:00 PM, 3 May, after a march of 19 miles, in support of Groupment A (CP Scheyern), is on the Scheyern Road.

*Advance Guard*

1 Platoon 1st Squadron
1 Heavy Machine-Gun Platoon of the machine-gun squadron

*Main Body*

Regimental Commander (with Adjutant, Signal Officer, Liaison Officer, C.O. machine-gun squadron, C.O. motorcycle liaison platoon, C.O. armored car detachment and 8 motorcycle orderlies
Armored car reconnaissance patrol (4 vehicles)
1st Squadron (less one platoon)

Hq. 17th Cavalry
Regimental signal platoon (horse)
Machine-gun squadron (less one platoon)
2d Squadron
Platoon light minenwerfers
3d Squadron
1st Battery (horse) of the 1st Field Artillery
4th Squadron
½ platoon heavy machine guns

Following by bounds:

1 Regimental signal platoon (motorized)
Engineer motorized section

Assigned for protection:

1 Antitank platoon of 3 guns

II—Special Situation

At this time the commanding officer, 17th Cavalry, is in possession of the following information:

The CP of the 19th Infantry was displaced an hour ago from Eggern (1200 yards southeast of Gerolsbach) to Gr. Palmberg (1 mile northeast of Eggern). The liaison officer left at the old CP transmitted information to the cavalry liaison officer as follows:

"Repeated enemy attempts to pierce the Gerolsbach front between 9 and 12 o'clock were repulsed successfully—about 500 prisoners, part of them without cartridges and without regular supply for two days, have been captured and sent via Alberzell toward Aichach. Since 1:30 PM, enemy attempts to break through have been in progress at Euernbach and to the east."

The 3d Battalion 19th Infantry, engaged toward Singenbach and Klenau, sent the following message dated at 2:00 PM: "Only hostile reconnaissance patrols have appeared in front of Klenau. The battalion withdraws the security element from Klenau (1st Company reinforced). The enemy is intrenching in front of Singenbach. The battalion requests additional orders. The liaison officer added that he had sent this information by mounted messenger to the new CP of the regiment at Gr. Palmberg, about one-half hour since."

The liaison officer of Tactical Groupment A sent by mounted messenger at 2:00 PM, the following written message: "Vicinity hill 492 (about 1½ miles southeast of Scheyern) at 2:00 PM. A violent enemy attack is in progress against the sector: Scheyern—Euernbach. Enemy artillery opposite Vieth and Mitt-Scheyern. Cavalry is toward Scheyern."

A radio message from Tactical Groupment A at 2:00 PM states: "Important enemy concenerations are in the woods northeast of Pfaffenhofen. The enemy has taken Vieth. Danger of a breakthrough becomes very grave. The 17th Cavalry is requested in haste."

A mounted messenger from the 1st Platoon 1st Squadron 17th Cavalry, which covers the advance, reports as follows: "The enemy, at least one company, advances south in deployed formation toward hill 500 near Edling. The platoon opposes the advance of the enemy at Winden."

A section of motorcycle riflemen, reinforced by a motorized section of heavy machine guns, reports by a noncommission officer (motorcycle) that it has arrived at Hirschenhausen, at disposition of the 17th Cavalry.

A dropped message addressed to the commanding officer 17th Cavalry reported the advance of new enemy elements toward Petershausen.

No information has been received from an armored car patrol operating in the valley of the Ilm.

Noise of intense combat is heard coming from the area: Pfaffenhofen—Vieth, as well as the area southeast of Schrobenhausen.

In the sector of the 19th Infantry only intermittent fire of machine guns can be heard.

A squadron of friendly airplanes flies around the cavalry regiment at low altitude in a southeasterly direction.

At 3:00 PM, fire of heavy machine guns on hill 519, immediately southeast of Winden, and fire of antitank cannon from the direction of Eck, suddenly begins. At Eck, red rockets announce the presence of enemy armored vehicles.

III—Remarks

1st. *Composition of the 17th Cavalry reinforced, at 3:00 PM, 3 May:*

*a.* The regiment has 2 groups of armored reconnaissance vehicles of 4 vehicles each, armed with machine guns and antitank weapons.

*b.* The cavalry squadron contains 3 platoons, 9 light machine guns in all.

*c.* The regimental communications platoon has important visual signal matériel, radio matériel, telegraph and telephone, and some telephone apparatus. With the horse elements of the communication platoon is a telephone set placed by the 3d Squadron at the disposal of the regimental commander.

*d.* The machine-gun squadron has three platoons, of which one is pack.

*e.* The platoon of motorcycle riflemen sent toward Hirschenhausen is composed of 3 groups, each having 21 light machine guns.

2d. Troops skilled, excellent morale, and well trained.

3d. The civil population aids the troops in all circumstances.

4th. Meteorological conditions:

Weather, clear; visibility, good
Sunrise: 4:00 AM
Sunset: 7:37 PM

5th Requirement:

(1) Estimate of situation by the commanding officer 17th Cavalry reinforced, and decision taken;

(2) Orders given and reports made based on this decision.

*Estimate of Situation by Commanding Officer 17th Cavalry Reinforced*

The 17th Cavalry has received the mission of marching toward Scheyern to reinforce Tactical Groupment A. The latter has the duty of opposing on the Gerolsbach, downstream from Vieth; enemy attempts to break through. It is in the general cadre of this mission that prescribes that which will fall to the 17th Cavalry.

In the presence of the enemy threat toward Vieth, Tactical Groupment A appeals for aid and it becomes difficult for the 17th Cavalry to march rapidly to Scheyern.

Indeed, the shortest road, which passes in the immediate proximity and to the east of Winden, is under fire of enemy elements whose advance has been observed in the region of hill 500 (near Edling), and who have apparently pierced the front in the sector of the 19th Infantry. Until the present, a single company has been observed, but it is likely that the first elements of an enemy has broken through with more important effectives. This enemy, without doubt, has only a diminished offensive power (lack of munitions, shortage in supply), but it is not necessary to conceal that it struggles with the energy of despair.

If the cavalry regiment was engaged closely in action against these enemy elements, it would probably be impossible to intervene efficaciously to the profit of Tactical Groupment A, before dark.

Besides, another difficulty for execution of its mission is in the appearance toward the south of other enemy elements. In this manner, encirclement of the enemy risks being threatened by an action arising from the outside.

Consequently, it is fitting to examine whether the cavalry regiment should turn aside from its mission in order to turn against these new elements and prevent them from acting against the rear of friendly forces that hold the line: Gerolsbach.

It seems as though by abandonning its initial mission, the cavalry regiment would plan into the hands of the enemy and would not be disposed for decisive intervention in the region of Scheyern. The advance of the enemy would be rendered easier and by favor of night would effect a withdrawal.

On the other hand, it appears indispensable to take delaying action against enemy elements that have broken through to the south. Until elements of the 19th Infantry (for example at Klenau and Singenbach) and of the 7th Division (following development of the pursuit) become available and can intervene, it would appear that detachments consisting of platoons of motorcycle riflemen, motorized section of engineers, platoons of antitank weapons could be judiciously employed to undertake this action, and to protect the regiment against armored vehicles that have already appeared to the north of the Ilm.

In short, the regiment can adhere to its original mission; the sole possibility of arriving rapidly and in conformity with orders received in the region of Scheyern depends upon its advance by Schachach and Edersberg. By assuring protection with some elements against the enemy elements which have broken through at Euernbach as well as against those which have appeared in the south, the advance should continue without incident.

Against the eventual intervention of armored vehicles, protection will be assured by the terrain itself, for the roads traverse a wooded region little suited to their action. By utilizing the greatest speed possible for the horses, which are not rested, the regiment should reach Scheyern, decisive point of combat, in about an hour.

*Decision of Colonel Commanding 17th Cavalry*

The 17th Cavalry, with its reinforcing elements, will continue with its main body its advance on Scheyern by Schachach and Edersberg, under protection of some elements which will oppose the advance of the enemy breaking through at Edling and Petershausen, with a view to putting itself rapidly and in conformity with its mission at the disposition of Tactical Groupment A.

*Orders Given and Reports Made to Carry Out this Decision*

(1) Crossroads 700 yards west of Schachach, 3/V 3:00 PM

Verbally to the officer assistant: "Carry at a gallop to the 1st Squadron, the regimental headquarters, to the 2d Squadron, and to the minenwerfer platoon, the following instructions:

"The 1st Squadron continues its advance in the indicated direction; its leader, to me. The regiment with regimental headquarters at the head will oblique from here, in direction of Schachach. The 2d Squadron will hasten across country in direction of Schachach; its leader to me. The minenwerfer platoon with the elements that follow it will close at the trot on the machine-gun squadron."

(2) Same point 3:03 PM

Verbally to the commander of the motorized engineer section, to the commander of the group of armored cars (in presence of the communications officer, liaison officer, commander of the machine-gun squadron, noncommissioned liaison officer to the motorcycle riflemen, as well as the commander of the 1st Squadron, who had arrived):

"New enemy elements estimated to be a reinforced regiment of infantry advancing from Petershausen reached Jetzendorf in half an hour. Enemy armored vehicles have appeared in vicinity of Eck. You hear the fire of our antitank platoon.

"The 17th Cavalry with reinforcing elements continues the advance in direction of Scheyern by Schachach and Edersberg.

"The motorized engineer section with following elements attached: 1 platoon motorcycle riflemen at Hirschenhausen (noncommissioned liaison officer here present); 1 motorized radio squad with portable station furnished by communications platoon behind the regiment; one patrol of armored cars (less two cars), will have the mission of stopping on the Ilm from Priel the advance of these new elements in direction of the flanks and rear of the regiment. It will be a question of preventing enemy armored elements from debouching suddenly on the road: Priel—Eck across the woods southeast of Kemmoden in direction of new itinerary of the regiment. In the presence of enemy superior in numbers, withdraw fighting to the west of Scheyerner-Forst. Execute immediately reconnaissances in direction of Kemmodon and Jetzendorf. Points to determine: Has the enemy already reached the Ilm at Priel? Is the enemy marching in the direction of Steinkirchen?

"Liaison with the 19th Infantry at the old CP of Hof, as well as with the 1st Squadron at Winden, which is defending at that point against the enemy breakthrough."

(3) Same point, 3:05 PM

Verbally to leader Y . . . of the half patrol of armored cars that remains available:

"The communications officer has given you a map of the situation.

"The cavalry regiment with reinforcing elements continues its advance on Scheyern by Schachach and Edersberg, in order to rejoin Tactical Groupment A, covered against enemy elements from Petershausen and Euernbach.

"March in advance with your cars and three motorcyclists on the new route. Mission: Reconnoiter the new route; determine if it is free; carry rapidly the following report to Tactical Groupment A and inform its commander of the situation and the dispositions that I am taking. Report: the 17th Cavalry, with reinforcing elements, marches with its main body on Scheyern by Schachach and Edersberg. I will probably reach Fernhag about 3:45 PM. Request new orders."

(4) Same point, 3:08 PM

Verbally to the commander 1st Squadron (in presence of the commander 2d Squadron, commander machine-gun squadron, of the officer assistant, of the communications officer and the liaison officer, after a rapid explanation of the situation):

"You have heard my instructions for assuring protection of the regiment against enemy elements coming from the south and for modifying the itinerary in the direction of Schachach. The enemy estimated to be at least a company probably followed by other elements, has broken through at Euernbach and was observed at 3:00 PM advancing in direction of Winden. The leading platoon of the 1st Squadron has already opened fire. The enemy breakthrough dangerously threatens Vieth.

"My intention is to reach the region of Scheyern by Schachach and Edelsberg as soon as possible to put myself at the disposition of Tactical Groupment A in order to hinder the advance of the enemy.

"The 1st Squadron having at its disposition one half-platoon of heavy machine guns will facilitate execution by the regiment by assuring protection against the enemy coming from Euernbach and advancing in direction of Winden. It will make every effort to act in cooperation with the 19th Infantry whose old CP is at Hof and whose new CP will be at Gr. Palmberg.

"The 1st Squadron as reinforced will next make every effort to rejoin the regiment as soon as possible at Scheyern (the commander 1st Squadron is released)."

To the commander 2d Squadron 3:08 PM

"The 2d Squadron will march at head of the regiment preceded by important security elements and will seek by reconnaissance the following information:

"Is Scheyerner Forst clear of the enemy? Where is the CP of Tactical Groupment A? Where is it engaged? Is it holding still to the north, from the Weihern defile, or from this point? Or has the enemy been beaten in this region?

"I assure execution of a reconnaissance on the right flank by Reichertshausen, Ilm-Munster, in direction of Neider-Scheyern."

(5) Same point, 3:09 PM

Verbally to the regimental liaison officer:

"Return immediately by the old CP of the 19th Infantry and Gerolsbach to the CP of the 3d Battalion 19th Infantry.

"Report to the commander 19th Infantry and to the commander 3d Battalion 19th Infantry, the situation, and my intention and dispositions adopted.

"I consider as necessary the engagement of elements becoming available of the 19th Infantry and 7th Division against the new elements that have made their appearance to the south and against those which are opening a passage at Euernbach.

"I request complementary information to the 7th Division."

(6) During march toward Schachach, 3:13 PM

Verbally to the commander of the officer reconnaissance at disposition of the regimental commander:

"The communications officer has informed you of the situation. (Explained mission of regiment and dispositions taken as in the orders No. 3.)

"The reconnaissance patrol of Lieutenant X . . . disposing a radio squad with a portable station furnished by the regimental communications platoon, will reconnoiter on the right flank of the regiment on the itinerary Kemmoden —Langweid—Grunoback—Reichertshausen—Ilmmunster—Nieder-Scheyern.

"I desire to know if the valley of the Ilm is clear of enemy and what is the situation in the region of Nieder-Scheyern."

(7) In accordance with the orders given previously, the officer assistant delivered the following written report for Tactical Groupment A, which had been drafted by the regimental commander at Edersberg before the column resumed its march at the trot:

17th Cavalry, reinforced. Edersberg, 3 May, 3:22 PM

*Report for Tactical Groupment A*

"The enemy, which has broken through at Euernbach (at least one company) at 3:00 PM, advancing in direction of Winden, was stopped by the 1st Squadron, reinforced, near Winden.

"New enemy elements coming from the south and estimated at a regiment of infantry reinforced, left Petershausen at 2:30 PM, in direction of Jetzendorf. Enemy armored vehicles were at Eck at 3:00 PM (northwest of Jetzendorf). The section of motorized engineers reinforced by divers elements opposes their advance.

"The cavalry regiment with reinforcing elements, continuing the march by Schachach and Edersberg, can reach Fernhag at 3:45 PM.

"At this point, it requests new orders:

"Written message transmitted by three motorcycle messengers.

Signed—Lieutenant-Colonel X . . ."

* * * * * * *

At the end of this study it is fitting to summarize for the reader some of the essential characteristics of principles of German tactics which are applied in the preceding lines.

Note first of all that in this concrete case, as in the greater part of those which are habitually studied in the German reviews, it is not only a question of a cavalry regiment, but of a veritable tactical groupment comprising, in-

dependent of the regiment, motorized elements (armored cars, engineers, motorcycle riflemen) acting in common for execution of the mission. The fact that having to command such a groupment implies on the part of the leader a profound knowledge of properties of different arms and conditions of their employment, and on the part of the reinforcing elements, an aptitude to action in common which can only be developed by frequent exercises.

The authors are bent next on placing the units in a critical situation necessitating on the part of the cadres a marked aptitude for discriminating very rapidly, on information that comes to them, the measures necessary to favorable evolution of the situation, in making decisions, and finally in giving appropriate orders.

The study of the proposed solution falls generally into three parts:

First, what the German Regulations ("Truppenführung") calls the estimate of the situation which it defines in several paragraphs of which an extract follows:

"Every decision is preceded by an estimate of the situation ("Beurteilung der Lage"). It requires a rapid intellectual work, simple and logical considerations, and should be limited to essentials. . . .

"The examination of the friendly situation shows where different elements of subordinate forces are found, what are those immediately disposable for the operation envisaged, and those which are disposable only later, what are the supplementary forces which can be counted on, and what is the support that neighboring detachments can furnish, or that of which they themselves have need. . . .

"The estimate of the enemy situation should be made from the same points of view."

The second part comprises the decision taken by the commander, of which the Regulations prescribe the following definition:

"A firm decision should be the result of all these considerations.

"The decisions of the adversary do not always correspond to the real situation of the adverse side. In such a situation, the greatest chance of success is offered to those who will utilize most quickly and adroitly the subsequent learning of the situation without letting himself detour from the decision taken for less than major reasons."

Finally, in the third part are reproduced the orders given and reports made consequent to this decision:

The echelon of orders and reports in time appears conventional. It is evidently an example solution and the authors endeavor to show in a document destined for instruction of cadres that these latter should think and act quickly. No written orders, only verbal orders, which corresponds with the spirit of the prescribed Regulations and particular orders suited to the urgency of the situation.

The pursuit engaged by the Blue forces from the west follows the principles explained in the prescribed German Regulation which indicates:

"The conqueror pursues on the widest front possible in order to reach the adversaries flanks, to gain speed, and to oppose his withdrawal on obstacles, or to harass his rear communications."

But as well as the depth marked by the authors in this action which is exercised on the uncovered flank and rear of the adversary, the elements employed are relatively weak and bar the obstacle of the Gerolsbach on a very wide front.

It follows that they have been submitted to pressure of enemy elements who, turning aside from the general direction of withdrawal are going to make an effort to clear a passage at all costs.

The 17th Cavalry, with its reinforcing elements, which marches in support of Tactical Groupment A, in order to act at a decisive point, at the extremity of the open flank of the enemy and in direction of his rear, should not allow itself to be turned from its mission to repulse local attempts at breakthrough at Euernbach, or to march toward new elements which have appeared toward Petershausen. It can no more completely neglect these threats.

In consequence, with few enough units, but suited by their nature to the mission temporarily confided to them, he stops the enemy elements, permitting thus the intervention of forces that become available from the 7th Division or from the 19th Infantry, during which with his bulk he marches toward Scheyern in order to put himself at the disposition of Tactical Groupment A.

The disposition adopted made use, according to the authors, of the suppleness in intervention that is possible to attain with a regiment of cavalry reinforced by motorized elements.

The suppleness can only be obtained by orders following logically and given rapidly to those executing.

This technique of command adapted to critical situations, they remark in conclusion, can be practiced without exhaustion (weakness) only by leaders and in the units trained from times of peace to act in common in exercises on the terrain.

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We refrain from drawing conclusions from this study which was to inform the reader and to show him a situation of German tactics. It may be permitted neverthless to formulate the wish that this article will serve to complete the knowledge of those who seek to study the German cavalry, and that it will create fruitful meditations among the readers of this review.—Commandant Z.

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## THOUGHTS ON THE NEW ITALIAN "BINARY" INFANTRY DIVISION

["'Motorisierte' Gedankensplitter aus aller Welt. Die neue italienische Inf.-Versuchsdivision 'Binaria'," by Lieutenant Colonel Braun. Condensed from *Militär-Wochenblatt*, 18 November 1938. Translated from the German in the Translation Section, The Army War College, Washington, D.C.]

By Lieut. Colonel E. M. Benitez, *Coast Artillery Corps*

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For some time, especially since the Ethiopian campaign, there has been a strong tendency, in Italy, to replace the former infantry division of three infantry regiments by a division of two regiments as the basic large unit. Meanwhile, these tendencies have developed to a point where the Blue side in the 1938 maneuvers consisted exclusively of two "binary" divisions, to serve as a source of new and definite experiments. (See *C & GSS Quarterly* December, 1938, page 17.)

The progress of motorization stood the champions of the "binary" principle in good stead. Their reasoning is as follows: All modern corps troops are motorized, including the machine-gun units (one regiment to a corps), the artillery (two or three regiments to a corps), the tank units, the engineers, the signal troops, the chemical units and others. Thanks to the inherent speed of the motorized and mechanized corps troops, the corps commander can speedily reinforce the two infantry regiments of an infantry division in action. In the present era of the motor, such support will rarely be too late. The division of two regiments requires no strong organic reserve in the form of a third regiment; its mission is simply to attack. It devolves upon the corps commander, with his reserve, to see the operation through to a successful conclusion. Besides the corps troops enumerated above, the corps commander has at his disposal one or several divisions of the second line, including perhaps large units of tanks or mechanized cavalry, with which to enforce his will and make a main effort. While the corps commander is the "pillar and whole support of the battle," the division commander is merely a "skirmisher."

The division commander may be glad to get rid of one infantry regiment, one artillery battalion and the corresponding service elements, because by relinquishing them, he gains a number of considerable advantages, which may be summarized as follows:

(1) The "binary" division has greater mobility; its command is simplified; it requires less supplies.

(2) Both the active and passive antiaircraft defense of the division, which have become highly difficult, especially when the division is marching by day, can be carried out with greater ease. Depth and breadth of the marching columns, as a protection against aircraft; development; approach, distribution into several columns; air warning service; camouflage and concealment; organization of the combat echelon; bringing up of the motorized echelon and supply trains; order of march (it is not always that two routes are available, as usually required—or at least, desired—for the division of three regiments)—all of these conceptions are simplified.

(3) Modern infantry possesses powerful machine guns, antitank guns, mortars, automatic rifles, grenade projectors, antiaircraft machine guns and improved means of communication, especially radio. This infantry can independently sustain an action independently for a greater length of time than the old infantry. The new-style infantry regiment, with its tremendously increased fire power, constitutes an independent and powerful tactical unit under a uniform command. The regiment requires no aid from a higher authority for a long time, if supported by the division artillery and tanks.

(4) Modern military aviation, too, has greatly increased in numerical strength and striking power. It participates in all decisive ground operations; dropping bombs and harassing the enemy with machine-gun fire, the air forces provide strong cover for the friendly infantry and supplement, or even replace, the friendly artillery. No harm is done, therefore, by reducing the division artillery by one battalion; on the contrary, the commander of the division artillery may be glad his force is smaller, especially during the initial phase of an operation, for he will receive early reinforcement from the corps artillery.

(5) There may be further advantage with regard to mobilization. Ten infantry divisions of three infantry regiments each (we realize, of course, that this calculation is not ments eact (we realize, of course, that this calculation is not absolutely true, since a modern division includes not only infantry, but among others, staffs, auxiliaries and supply elements as well). From the point of view of the commander of an army, a group of armies, an entire front, or even of G.H.Q., it may not be easy to decide which of the two organizations to choose. The German High Command, in the World War, changed from the division of four infantry regiments to that of three regiments, for the purpose of creating new divisions.

(6) The motor transport problem of the division of two regiments is considerably less complicated than that of the division of three regiments. In an era in which the motor transport of large units plays a prominent part in maintaining the progress of the "maneuver in general," in lending mobility to the conduct of the operations and in preventing stabilized warfare, this consideration is of no mean importance. It is not at all immaterial whether 1,000 trucks, covering about 45 miles of road and using gasoline at the rate of 200 gallons a mile are sufficient, or whether from 1,200 to 1,500 trucks, representing a much greater quantity of equipment and fuel and covering 60 miles of road, are needed for the transport of a whole division.

Those and other reasons are advanced by the champions of the "binary" division.

It is remarkable that, so far, nothing has been heard from France or other nations with large armies about similar reorganizations. The reason for this is that the new experimental division has its disadvantages as well as its advantages. The principal disadvantages are:

(1) The Italian maneuvers came to a halt at the moment when a gap was created in the hostile disposition and a breakthrough was about to materialize; in other words, the maneuvers were halted at the height of the crisis. The corps commander had just decided to commit to action his second-line division, evidently because the "binary" division in the front line could not handle the situation any longer without support. He intended to take advantage of the night preceding the last day of the maneuvers to move up the second-line division and settle the issue at stake by resuming the offensive the following day. However, if the commander of the forward division had had available a third regiment of infantry and stronger artillery, he might have succeeded, late in the afternoon of the day before the end of the maneuvers, utilizing his own resources to complete the penetration and deprive the opponent of that well-known night which, as war has taught, might be just sufficient time to enable the enemy to close the gap. It is, indeed, characteristic of a hard struggle for the decision that the fate of the operation, at the most crucial moment, hangs on a thin thread—on that last infinitesimal, yet almost superhumanly difficult push that will force the enemy to his knees. Witness the Germans at Amiens, in 1918, and at Fleury, in 1916; witness the British at Cambrai, in 1917. Nearly every single minute counted. Will the corps commander, first of all, recognize the decisive minute? And,

secondly, will he immediately take advantage of it? To be sure, he has at his disposal reconnaissance aviation, which the division commander, as a rule, does not possess. However, the corps commander does not receive the necessary information from the ground reconnaissance elements until late, and moreover, he lacks the immediate insight into the situation that the division commander possesses.

(2) The Italian army gained most of its favorable experiences in Ethiopia, a country noted for its scarcity of roads, high mountains, lack of water, tropical heat and absence of practically all aids found in a civilized country. That the division of three regiments is too cumbersome in that kind of country, is obvious. Similar lessons may be gained in the Alps, which, in any case, will be one of the main theaters of operation of the Italian army. Every country has its own particular military defense geography which influences all phases of national defense, including troop organization.

Poland and Russia are justified in retaining their cavalry divisions; Japan organized new ones upon invading the vast expanse of China. The life and progress of a nation and, above all, its national defense, cannot be developed by merely copying foreign examples and by heedlessly discarding old and well tried-out forms and laws.

OUR MODERNIZED CAVALRY

The First Cavalry Division, Fort Bliss, Texas, Going into Action.

# Book Reviews

By Lieutenant J. W. Rudolph, *Infantry*

## VIEWS ON AIR DEFENSE

By Lieutenant General N. N. Golovine

100 pages . . . Aldershot: Gale & Polden

General Golovine, former professor at the Imperial Russian Military Academy, has, in collaboration with an unnamed technical expert, written a volume which deserves serious consideration among students of antiaircraft defense. It is a short book but it packs much information, both technical and theoretical, between its covers. That it deals primarily with the air defense of London is no handicap. Its principles may be applied to the defense of any important city or area.

The authors recognize the great strides in antiaircraft gunnery but feel that these advances have been met by new bombing methods, particularly the development of glider or rocket bombs which have not only increased the vertical range of effective bombing but have greatly extended horizontal ranges. Today, glider or rocket bombs may be accurate at horizontal ranges of ten miles, thereby complicating the task of defending gun batteries. Using much the same line of argument followed by Major Thomas Phillips in his widely read *Saturday Evening Post* article, "Preview to Armageddon," the general arrives at the conclusion that while ground defenses are necessary, principal reliance must be placed upon the air force itself for counter measures. Much of the book is devoted to a modernization of the Ashmore cordon guarding war-time London.

In a section devoted to aerial types, General Golovine presents four planes, built upon the same basic model, yet modified in size, armament, and speed to meet specific functions. All are twin-engined monoplane types, with retractable landing gear and altered according to their needs. First is the "scout," a fast, highly maneuverable observation plane for reconnaissance and patrol purposes. Next is the "interceptor," whose function is to intercept hostile bombing formations and break them up, if possible, in order that the "destroyers" may blast them from the sky with rapid-fire cannon and time-fuzed bombs. Last is the high performance bomber for offensive purposes.

## THE ELEMENTS OF IMPERIAL DEFENSE

By A. G. Boycott

435 pages . . . Aldershot: Gale and Polden

While its subject matter is of little interest to American readers, the method of this book points the way for a similar appraisal of our own defensive requirements, a subject until recently badly neglected in the United States. This meaty volume discusses the geographic, racial, political, and economic phases of every part of the British Empire, including existing defenses as well as suggestions for the future. Brief historical summaries are presented for each portion of the empire, communications are fully discussed, and the whole integrated into an intelligent outline of military and naval requirements. The United States could stand a parallel study of this type.

## A HISTORY OF MEXICO

By Henry B. Parkes

432 pages . . . Boston: Houghton Mifflin Company

The first complete, one-volume history of Mexico to appear in English since 1924 is a welcome addition to the literature of the western hemisphere at a time when interest in the nations below the Rio Grande is becoming more acute in the United States. Mr. Parkes, therefore, has filled a definite need by supplying much hitherto unused material, particularly of the later years of the Mexican revolution, which is still going on.

Chief interest in this work centers in the economic phases of the past eighteen years in Mexico, up to and including the oil expropriations. Although not a long work, it is colorful, accurate, and extremely readable. All essential material has been included and presented in such a manner that its true significance can be easily recognized. Mr. Parkes displays not only a first-hand knowledge of the Mexican scene but a happy facility for saying much in a few vivid words.

## THE PHILIPPINES. OUR PROBLEM OF FORTY YEARS

By Major William H. Anderson

338 pages . . . New York: G. P. Putnam's Sons

Proposals to fortify the island of Guam have revived interest in the Philippines, for defeat of the plan will make American defense of the islands impossible in spite of increased Filipino agitation for revision of the independence act. In short, a problem once believed settled may shortly become more vexing than ever. The appearance of Major Anderson's frank appraisal of the island question, from the pen of a man who has lived forty years in the Philippines, is therefore not only timely but welcome.

Major Anderson contends that the problem should be reexamined but he fears that such a course will come too late. For nearly half a century the United States has misunderstood and mismanaged the Filipinos, until today American

authority and respect in the islands are virtually ruined. At the same time, preparation for political independence of the Philippines has been paralleled by tightening the economic chains which bind them to the United States, whose Congress has always discriminated against American businessmen in the islands.

The Filipinos, in the author's opinion, are as ready now for independence as they ever will be, but he doesn't believe freedom will last long. Conquest by Japan is inevitable, a fact which all intelligent Filipinos know. Their political leaders, of whom Manuel Quezón is portrayed as the worst type of corrupt oriental cleverness, nevertheless lobby for independence because it is a convenient slogan for maintaining their unscrupulous hold upon the islands.

Frankly admitting that the Philippines have always been a liability rather than an asset, Major Anderson warns that American retention of the islands will require the reestablishment of authority and an entirely different method of control. The Filipino, being an Oriental, despises the white man who admits him to equality. He wants to rule or be ruled. In an interesting summary of American government of the islands, the author concludes that the only two officials who achieved lasting success—Leonard Wood and Paul V. McNutt—have been the only ones to apply that principle.

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## LATIN AMERICA: A BRIEF HISTORY

By F. A. Kirkpatrick

456 pages . . . New York: The Macmillan Company

World events of the past year have crystallized American public opinion in favor of as much insulation from Europe and Asia as possible. However, since trade and progress must go on, the eyes of North America have inevitably turned south. Cordell Hull's "good neighbor" policy, President Roosevelt's visit to South America, and the recent Lima conference have been progressive steps in our policy of drawing closer to the Latin American nations. It is therefore only natural that new literature should appear upon the subject.

Mr. Kirkpatrick has presented a scholarly and timely contribution to the history of the South American nations. That he has treated them as a unit—a mistake North Americans too often fall into, to the disgust of their southern neighbors—finds compensation in certain common denominators of history. It must be remembered, however, that South America is a vast and diverse continent, whose people not only differ radically in terms of climate, geography, and ethnology but also have as much national pride as anyone else, a fact too often neglected by patronizing North Americans.

Mr. Kirkpatrick skips the pre-conquest period, but his history of the last four centuries is accurate and condensed. Arrangement is excellent, presentation straightforward and readable, and his conclusions fair. His single volume is packed with much worthwhile material and, in view of our increased preoccupation with the defense of this hemisphere, is recommended to military students.

## AMERICAN LABOR

By Herbert Harris

459 pages . . . New Haven: Yale University Press

Histories of the labor movement in America have always travelled a difficult path. Most qualified historians have been so rabidly sympathetic that their work has lost much value—others have gone to the other extreme. Recently, however, the story of labor's struggle for position and power has emerged in its proper perspective under the pens of capable, informed, and comparatively impartial writers. Of these, Herbert Harris has produced a remarkably dramatic and readable review of the development of the American labor movement.

His book is divided into three main sections. The first is an incisive, rapid-fire summary of labor history in America from its beginning to the fall of the Knights of Labor. The second and largest division is an examination of seven different unions or union groups. The author concludes with a tightly packed description of recent labor events.

Mr. Harris' handling of the central portion of his book is brilliantly done. Emphasizing the wide difference in union behavior by describing the social, geographical, and economic background of each industrial group and its leaders, he achieves a surprising and unusual picture of the labor scene, and one that should prove valuable to future students of social problems.

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## JUNGLE PATROL

By Vic Hurley

399 pages . . . New York: E. P. Dutton & Company

The United States opened bleary eyes to the twentieth century, suffering from a thumping hangover. Not the least headache in the aftermath of an orgy of imperialism was the resistance to American control of an unexpectedly acquired island people seven thousand miles away. The Philippine insurrection formally ended with the capture of Aguinaldo, but the American people were in no mood to be told that the islands were still far from pacified. Out of this politico-military dilemma was born the Philippine Constabulary, the remarkably efficient and native police force that carried through the long and bloody task of bringing peace and order to the islands. Its story is thrillingly told in Mr. Hurley's history of the Constabulary, a book in which wild adventure is only exceeded by the truth.

Organized in 1901, the Constabulary was from the beginning a sinned-against organization. A native force, led by white officers, it was neither trusted nor respected, in spite of its early and oft-repeated demonstrations of efficiency. It tracked insurgent and semi-religious outlaws through the matted jungles and hills, always outnumbered and often poorly armed—the latter condition due to the army's refusal to permit up-to-date rifles in the hands of natives. The corps was fortunate, however, in that it attracted a cadre of remarkably brave and efficient officers,

who endowed it with superior training and discipline. When the Constabulary was incorporated into the Philippine army in 1935, it could point to a proud record of success after thirty-odd years of jungle warfare.

Of special interest to officers connected with Fort Leavenworth in recent years, are the many references to Captain Cary I. Crockett, now Colonel Cary I. Crockett, Director of The Command and General Staff School Special Class. Crockett joined the Constabulary shortly after its organization and served until 1908, when he was commissioned in the regular army. He compiled a brilliant record and was rated as one of the most efficient and courageous officers in the history of the Constabulary. His exploits on the island of Samar, to one of which an entire chapter is devoted, put pulp thrillers to shame.

The book is technically faulty. It is not well organized and skips around a great deal, but it tells a thrilling story in a sustained manner. It is hard to see how Mr. Hurley could have fallen down on his material. Not only has he told a gripping story but he has rescued a deserving corps from oblivion.

## SUPPLY IN MODERN WAR

By Colonel G. C. Shaw

341 pages . . . London: Faber & Faber

Of all elements of military knowledge, none is more important than logistics; likewise, none has been so universally neglected, for the prosaic routine of counting socks and hauling rations has always been avoided by the fighting man. Left to attention of civilian contractors, supply systems of the past became objects of profane scorn. The result has been the virtual exclusion of supply from military literature, a deficiency that makes Colonel Shaw's study doubly welcome.

The writer has divided his analysis into two parts, in the first of which, titled Man Power, he discusses supply establishments of the past, determines the reasons for their success or failure, and establishes four principles upon which these systems were based. These principles are developed through an excellent and colorful series of historical examples. He concludes, however, that the requirements of modern horde armies, armed with automatic weapons, are greater than these principles can satisfy, that supply needs have destroyed mobility, and that the solution lies on mechanization.

The second half of the book is devoted to supply in the military application of Machine Power. He develops the thesis that mechanized forces will regain the mobility lost by the communications shackled foot soldier, and that the supply of these "armies on wheels" is not only practicable but simpler than existing problems. It is unfortunate that Colonel Shaw allows for mechanization to run away with his analysis, for many of his statements are questionable.

However, Colonel Shaw is exploring a relatively new and only partially explored field, a field in which clashing theories are as numerous as theoreticians. He has the courage of his convictions, he writes well and colorfully, and his work is provocative enough to invite controversy. Readers may not agree with him but they will have to think about what he says, which is in itself ample justification for the author's effort.

## MAHAN: THE LIFE AND WORK OF CAPTAIN ALFRED THAYER MAHAN, U. S. N.

By Captain W. D. Puleston, U.S.N.

380 pages . . . New Haven: Yale University Press

In 1881, to the faculty of the newly organized Naval War College, was appointed a middle aged lecturer on naval history. Neither the appointment nor the career of the undistinguished officer so chosen indicated that the step was to be a turning point in one of the most significant careers of modern times, yet in the next twenty years, Captain Alfred Thayer Mahan was destined to influence vitally naval-political thought and strategy throughout the world.

The son of an obscure mathematics professor at West Point, Mahan had chosen a naval in preference to a military career. As a young lieutenant he served on a steam sloop throughout the Civil War, and for the next sixteen years pursued an undistinguished life as an officer in a neglected navy. Assigned to the War College, however, Mahan quickly developed a grasp of history and the importance of seapower in the rise of nations that was to revolutionize the mental processes of the world's admiralties.

In 1890 Captain Mahan published "The Influence of Sea Power Upon History, 1660-1783." The principles explained therein were not new, but never before had the subject of sea power been so concretely and powerfully analyzed. The book caused a world-wide sensation. During the next seven years, Mahan produced two sequels, "The Influence of Sea Power Upon the French Revolution and Empire" and "Sea Power In Its Relations to the War of 1812." He was to write many more treatises on naval matters before his death in 1915, but the trilogy became the foundation of his fame as the world's outstanding exponent of sea power.

Captain Puleston is more than adequately fitted to write about Mahan, both as a man and as the embodiment of modern naval theory. He has chosen to portray Mahan as an individual rather than to develop his principles in the light of modern history. The latter treatment would have endowed a good book with considerably more significance.

## A HISTORY OF THE UNITED STATES MARINE CORPS

By Lt. Col. Clyde H. Metcalf, U.S.M.C.

555 pages . . . New York: G. P. Putnam's Sons

The story of the U. S. Marines, studded with color, heroism, and vivid personalities, has never been completely or adequately told. Colonel Metcalf has only partially remedied the deficiency with a scholarly record that presents a detailed and factual chronology of a century and a half of marine history but which is unfortunately lacking in the color and spirit that is so much a part of the corps. It is doubtful, therefore, that this otherwise excellent volume will enjoy the popularity it deserves.

Since its organization the Marine Corps has played a stirring role in American military and naval affairs. From the fighting tops of the *Bonne Homme Richard* to the thickets of Belleau Wood, the "leathernecks" have borne their share of the battle, whether against Barbary pirates, the heights of Chapultepec, or the walls of Peking. Between wars they have ranged the seven seas, following the flag into every port and climate.

Through all adventures, the marines have been equal to their responsibilities, and distinguished by sincere devotion to duty. The author stresses throughout the fact that while the marines have always supported national policies they have never attempted to impose their own interpretation of those policies. Whatever they have done has always been on explicit order and under closest supervision of the federal government. There is, indeed, something of that same quiet attention to duty in the manner in which Colonel Metcalf tells the story, truthfully, faithfully, without boast or rattle of saber.

The colonel, whose twenty-six years of service have enabled him to participate in many marine corps activities both afloat and ashore, wrote this history while head of the historical section of marine headquarters, where he had access to all archives and all the clerical assistance he needed. The result may be considered an official history of the corps, free of official supervision and rich in fact. Unfortunately, the author either missed or excluded the stirring rhythm of the marine corps hymn from all but the first page.

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## MEIN KAMPF

By Adolph Hitler

994 pages . . . New York: Reynal & Hitchcock
669 pages . . . New York: Stackpole Sons

Whatever the critics' opinions of Adolf Hitler's autobiography as a piece of literature—and they are not flattering—there can be no doubt of its tremendous value as a document of significance in contemporary world diplomacy. Written while Der Fuehrer was an unknown political prisoner following the failure of Ludendorf's "beer putsch," *Mein Kampf* is a statement, not only of Hitler's political philosophy but of the program he set for himself and Germany if and when he attained power. As a proponent of the methods and uses of propaganda, diplomacy, and power politics, Herr Hitler is in a class by himself. The course of his policies to date, all outlined fifteen years ago, makes this book an important gauge of the future.

*Mein Kampf* was first translated and published in English in an expurgated edition in 1933. This edition, however, contained only about one-third the original text and omitted most of the significant detail. The present translation, available in two editions, contains the complete text.

Without discussing the merits of the publishers' battle raging over copyrights, it is sufficient to say that the Reynal and Hitchcock volume is the "authorized" translation and, for readers making their bow to Hitler prose, probably the easier going. It is three hundred pages longer than the Stackpole edition, the difference being used for supplementary notes and explanatory discussions.

Both translations give evidence of painstaking preparation. Even so, Herr Hitler's literary style is hardly classic; except for his exalted position and its grim significance the book would probably be dismissed with little comment. *Mein Kampf* is not easy reading but it holds the germ of future history.

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## FREMONT, PATHMARKER OF THE WEST

By Allan Nevins

648 pages . . . New York: Appleton-Century Co.

Twelve years ago Allan Nevins inaugurated his series of historical biographies with an unsuccessful, two-volume life of John C. Fremont. Having in the meantime won two Pulitzer prizes for biographies, Mr. Nevins returns to his first interest and produces a revision of his earlier work that is actually more of a completely new study than a rewrite job. Those who like their biography accurate yet lusty and vivid may well rejoice.

John Charles Frémont was among history's most fascinating and puzzling characters, and deserved better of posterity than he received. On the eve of the Civil War, the "pathfinder of the west" was one of America's most colorful and popular figures. Explorer, geographer, adventurer, he had played a leading part in the exploration of the Rockies and the conquest of California, and as a symbol of "Manifest Destiny" had been the unsuccessful Republican candidate for President in 1856. His successes were brilliant and his failures great, but the latter, coming at the end of his career, overshadowed his fame. All his luck came early; he lived to a forgotten old age that saw great cities rising "in the ashes of his camp fires" and his deeds forgotten.

Mr. Nevins interprets Frémont's colorful and varied career in terms of his character, background, and environment, presenting his fluctuations of good and bad luck as products of his good and bad qualities, which both helped him greatly and hurt him much. Such treatment accurately recognizes as the most important element in Frémont's life his wife Jessie, daughter of Missouri's famed Senator Thomas Hart Benton.

The author is, of course, sympathetic to Frémont but not blind to his faults. The man's rashness, his fiery temper, and his love of glory are as impartially presented as his courage, his charm, and his great contributive work in the building of the American west. The work is accurate in source and detail, careful in documentation, and fair in its judgments. Above all the vivid narrative does full justice, not only to the dashing character of its hero but to the epic period in which he flourished. It is a significant addition to American biography.

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## INSIDE EUROPE

By John Gunther

1938 edition, 514 pages . . . New York: Harper & Brothers

This is one of those rare books that live up to their jacket blurbs. First published in 1933, *Inside Europe* has

been revised annually, each successive edition more interesting than its predecessor. The 1938 edition is a big book of some 250,000 words; carrying the story of Europe's politics and personalities through the Munich agreement and up to October. There isn't a dull sentence in the whole volume.

Primarily a word portrait gallery of European statesmen, dictators, and their principal subordinates, *Inside Europe* is a discussion also of European politics as seen through the eyes and as programs of Europe's leaders. It is not an impartial history. The author very definitely has his likes and dislikes, and he pulls no punches. At the same time it is a book full of facts, inside information available only to one who knows his way around the continent.

*Inside Europe* deals at length with Hitler and his satellites, tells the story behind the Spanish war, Russia's purge, the death of Austria and the Czech Republic, as well as excellent chapters on Italy and the Fascist program. Ireland, Turkey, Poland, England, France—practically every corner of Europe shares the swiftly moving spotlight.

Mr. Gunther spent eleven years in Europe as correspondent for the Chicago *Daily News*. He has worked in every country of Europe and the Near East and is personally acquainted with many of his subjects. His chapters have the staccato quality of cable dispatches—sharp, clear, and with no words wasted. The book has been translated into twelve languages, suppressed in three countries. It is easy to see why.

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## MEMOIRS OF THE PEACE CONFERENCE

By David Lloyd George

In 2 volumes . . . New Haven: Yale University Press

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David Lloyd George, as the only living member of the small group of statesmen who directed the peace of Versailles, has endured fire for twenty years for his part in that settlement. This last section of his remarkable memoirs of the war and its aftermath would be valuable historical documents even without the popular feeling that existing world conditions are the inevitable aftermath of Versailles. Because Lloyd George is who and what he is, because his rebuttal is delivered with all the spirit that has characterized his half century of public life, these memoirs are interesting reading as well.

Lloyd George's basic answer to his many critics is, logically enough, that considering the hatreds and hysteria under which the Peace Conference was conducted, the peacemakers did about as good a job as could be expected. Without attempting to exalt himself or belittle others, he defends his own actions and emphatically denies certain familiar charges, notably that he campaigned during England's Khaki Election on a program of "Hang the Kaiser!". He believes, furthermore, that the failure of the treaties was not the fault of the treaties themselves but of later statesmen who either refused to live up to them or abused them.

The first volume is devoted mostly to a factual account of the Conference itself. The author quotes at length from the confidential minutes of the meetings of the Council of Ten, Imperial War Cabinet, and the Council of Four. Other interesting chapters are devoted to the many problems encountered by the conference, problems which might have been taken from the front pages of 1939, as well as to spicy sketches of leading figures. The second volume explains the problems arising from the attempts to set up states created by the treaties, the Italian claims, and the questions involved in the breakup of the old Turkish Empire.

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## EUROPE IN RETREAT

By Vera Micheles Dean

254 pages . . . New York: Alfred A. Knopf

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That Vera M. Dean, as research director for the Foreign Policy Association, has enjoyed and profited by experience and facilities for viewing the international scene, is clearly demonstrated in this fine analysis of contemporary Europe. Like everything written since and under the inspiration of Munich, her book is already behind the march of events, but it is, nonetheless, a valuable contribution, not the least of whose merits is its studied impartiality.

The author, while not approving many of the steps the dictators have taken, does believe in giving Italy and Germany some benefit of doubt. She feels, for example, that in the rise of Hitler, the democracies were only getting what they deserved. Hitler's treaty violations are only attempts to overthrow forcibly a system imposed and maintained by force in the first place. Far from opposing vice with virtue, the democratic powers are confronting one kind of imperialism with another.

A war over Czechoslovakia last year, while it might have ended in a German defeat, would not have done much good, for Miss Dean believes that Germany would merely have bided her time, more determined for revenge than ever. The democracies, by fighting fascism with its own weapons, are only running the risk of destroying democracy, she insists. Beyond suggesting that democracy redefine its ideals and correct the grievances committed in its name, however, she offers no concrete suggestions for a democratic policy.

Since 1919, most of the mismanagement of world affairs can be laid at the doors of the Allies, who have been unfair to Germany. In general, this book is a good, factual recitation of those mistakes and an excellent account of events since the war, particularly since 1933. It is a valuable work, excellently done.

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## ANTHONY EDEN: A BIOGRAPHY

By Allan Campbell Johnson

360 pages . . . New York: Ivès Washburn

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Anthony Eden is by all odds one of England's most charming public figures. He is also one of the world's most fortunate statesmen, whose brilliance is still subject to question. The latter point is of minor importance at the moment, however, since Mr. Eden is still a comparatively young man with a future, a circumstance which robs this book of value as an appraisal of his career but which endows it with timeliness.

In spite of the rise of labor and the periodic success of outsiders like Lloyd George and the Chamberlins, England

is still ruled by an inner circle of aristocracy. Within that oligarchy, promising young men are selected and groomed for public life in accordance with a well defined system. Anthony Eden was of that circle and already well advanced in his education when war swept over England. He emerged from the conflict the youngest officer of his rank in the British Army, lonely, tired, and older than his years.

Chosen by Stanley Baldwin as a political protege, he entered the Commons, served creditably, travelled, and broadened his horizons in the usual succession of secretarial posts until Baldwin considered him ready. Once in the Ministry, his advance was spectacular and reached the Foreign Office. There, while he continued to charm his associates, the suspicion grew that his personality was more striking than his intellect. He failed to live up to the requirements of his office at a particularly critical time in England's history.

Eden has receded but is still far from finished. He will undoubtedly be back with added years and experience to accomplish his destiny. Mr. Johnson thinks so. His book is sympathetic but discriminating, it tells what people are curious to know about Mr. Eden, it is well written and clear. Mr. Johnson, like his subject, appears to be a young man with a future.

# Reading Course for Officers

### WAR DEPARTMENT BULLETIN, 1928

List of selected books relating to historical, political, economic, and military subjects, published for the information of the service.

This list is divided into sections corresponding to the several periods of an officer's service. The Fifth Period is the concluding section. (For First Period, see the June 1938 Quarterly, page 142; for Second Period, see the September 1938 issue, page 55; for Third Period, see the December 1938 issue, page 47; and the Fourth Period is found in the March 1939 issue, page 84.)

### FIFTH PERIOD (AVERAGE SEVEN YEARS)

(AFTER THE ARMY WAR COLLEGE COURSE)

HISTORY OF THE UNITED STATES, 1801-1817. 9 vols. (Henry Adams)

THE STUDY OF WAR FOR STATESMEN AND CITIZENS. 1 vol. (Sir George G. Aston)

LIFE OF JOHN MARSHALL. 4 vols. (Albert J. Beveridge)

THE AMERICAN COMMONWEALTH. 2 vols. (James Bryce)

MODERN DEMOCRACIES. 2 vols. (James Bryce)

HISTORY OF CIVILIZATION IN ENGLAND. 2 vols. (Henry T. Buckle)

THE WORLD CRISIS. 4 vols. (Winston S. Churchill)

HISTORY OF MODERN EUROPE. (Sidney B. Fay)

THE HISTORY OF THE DECLINE AND FALL OF THE ROMAN EMPIRE. 5 vols. (Edward Gibbon)

WHAT'S WRONG WITH CHINA. 1 vol. (Rodney Y. Gilbert)

THE AGE OF BIG BUSINESS. 1 vol. (Vol. 39 of Chronicles of America Series) (Burton J. Hendrick)

ROOSEVELT AND THE CARIBBEAN. 1 vol. (Howard C. Hill)

THE REPUBLICS OF LATIN AMERICA. 1 vol. (Herman C. James and Percy A. Martin)

THE HISTORY OF AMERICAN FOREIGN POLICY. 1 vol. (John Latane)

THE FEDERALIST. 1 vol. (Madison, Jay, Hamilton, et al.) (Ed. by Henry C. Lodge)

THE HISTORY OF ENGLAND. 5 vols. (Thomas B. Macaulay)

THE FRENCH REVOLUTION. 1 vol. (Louis Madelin)

GROVER CLEVELAND, THE MAN AND THE STATESMAN. 2 vols. (Robert McElroy)

THE MASTERS OF CAPITAL. 1 vol. (Vol. 41 of Chronicles of America Series) (John Moody)

THE RAILROAD BUILDERS. 1 vol. (Vol. 38 of Chronicles of America Series) (John Moody)

IMPERIALISM AND WORLD POLITICS. 1 vol. (Parker Thomas Moon)

THE INTERNATIONAL RELATIONS OF THE CHINESE EMPIRE. 3 vols. 1918. (Hosea B. Morse)

THE RISE OF THE DUTCH REPUBLIC. 3 vols. (John Motley)

THE MIDDLE AGES. 1 vol. (395-1272) (Dana C. Munro)

THE ARMIES OF LABOR. 1 vol. (Vol. 40 of Chronicles of America Series) (Samuel P. Orth)

THE BOSS AND THE MACHINE. 1 vol. (Vol. 43 of Chronicles of America Series) (Samuel P. Orth)

CAVOUR. 1 vol. (George Maurice Paleologue. Translated by Ian F. C. Morrow and Muriel M. Morrow)

A STORY OF RUSSIA. 1 vol. (Sir Bernard Pares)

JAPAN, THE RISE OF A MODERN POWER. 1 vol. (Robert Porter)

THE UNITED STATES AND MEXICO. 1 vol. (James F. Rippy)

LATIN AMERICA IN WORLD POLITICS. 1 vol. (James F. Rippy)

BISMARCK. 1 vol. (C. Grant Robertson)

THE HISPANIC NATIONS OF THE NEW WORLD. 1 vol. (William R. Shepherd)

AMERICA COMES OF AGE. (Andre Siegfried)

THE CANADIAN DOMINION. 1 vol. (Vol. 49 of Chronicles of America Series) (Oscar D. Skelton)

THE STRATEGY AND TACTICS OF AIR FIGHTING. 1 vol. (Oliver Stewart)

THE AGE OF INVENTION. 1 vol. (Vol. 37 of Chronicles of America Series) (Holland Thompson)

THE NEW SOUTH. 1 vol. (Vol. 42 of America Series) (Holland Thompson)

THE MEXICAN MIND. 1 vol. (Wallace Thompson)

THE DESTINY OF A CONTINENT. 1 vol. (Manuel Ugarte)

# Library Bulletin

## Books Added to the Library Since March 1939

Albrecht-Carrie, Rene. — **Italy at the Peace Conference.** 1938 [M 9403-C7-G3-D]

American Academy of Political & Social Science. — **Better city government.** A discussion of the goals and achievements of municipal governments in the United States. (The Annals, September 1938) 1938 [352]

Armour, G.D. — **Bridle and brush.** Reminiscences of an artist sportsman. 1937 [799.25]

Armstrong, Hamilton Fish.—**When there is no peace.** 1939 [M 940-A]

**Baily's Hunting Directory, 1938-39.** With diary and hunt maps. 1938 [799.25]

Baker, Ray Stannard.—**Woodrow Wilson; Life and letters.** Vol. 7: War leader, April 6, 1917-February 28, 1918. 1939 [973-B92 (WI)]

Banning, Kendall.—**Annapolis today.** 1939 [M 8209-C.73-D3C]

Belloc, Hilaire. — **Louis XIV.** 1938 [944-B92 (LO)]

Benoist-Méchin, J. — **Geschichte des deutschen Heeres seit dem Waffenstillstand, 1918-1938.** Band 1: Vom Kaiserheer zur Reichswehr. [History of the German Army since the Armistice. Vol. I: The Imperial Army to the Reichswehr.] 1939 [M 203-C.43-C]

Berry, Sir James & Lee, Stephen G.—**A Cromwellian Major-General.** The career of Colonel James Berry. 1938 [M 942-B92 (BE)]

Bertram, James. — **Unconquered.** Journal of a year's adventures among the fighting peasants of North China. 1938 [M 951-A]

Blin, General. — **Les Offensives de septembre 1915 sur la Front Francais.** [The offensives of September 1915 on the French Front.] 1938 [M 9403-J.44:5]

von Borcke, Kurt. — **Deutsche unter fremden Fahnen.** [Germans under foreign flags.] 1938 [M 943-B920]

Briffault, Robert. — **Decline and fall of the British Empire.** 1938 [942-A]

Brill, Charles J. — **Conquest of the Southern Plains.** Uncensored narrative of the battle of the Washita and Custer's Southern campaign. 1938 [M 973-Q-818]

Brink, Captain Francis G. — **Corps and army operations; basic principles; staff functioning, with CPX check lists.** 1938 [M 506-F3-A.73]

Brown, John P. — **Old frontiers.** The story of the Cherokee Indians from earliest times to the date of their removal to the West, 1938. 1938 [M 973-Q1A]

Bruck, W.F. — **Social and economic history of Germany from William II to Hitler, 1888-1938.** A comparative study. 1938 [943-A]

Buhr, Major R.M. — **Die Geschichte des I. Westf. Pioner-Bataillons Nr. 7 und seiner kriegsverbande im Weltkriege 1914/18.** [History of the 1st Westphalian Engineer Battalion No. 7 and their units to which attached in the World War, 1914-1918.] 1938 [M 9403-G10-C.43]

Burnap, Willard A.—**What happened during one man's life-time, 1840-1920.** A review of some great, near great and little events. 1923 [M 973-C]

Carrias, Chef de Bataillon. — **Les Renseignements de Contact.** [Types of information gained on contact.] 1937 [M 505-E5]

Chapman, Charles E. — **Republican Hispanic America.** A history. 1937 [980]

Cherne, Leom M. — **Guide to tax economy.** 1938 [336.2]

**Code of the laws of the United States of America.** Cumulative Supplement IV, January 3, 1935 to June 30, 1938. 1938 [345.21]

Colby, Charles C. — **Geographic aspects of international relations.** 1938 [M 910-A]

Congress:

**Official Congressional Directory for the use of the United States Congress, 76th Congress, 1st Session, beginning January 3, 1939.** 1939 [328.736]

**United States Statutes at Large.** Vol. 52 1939 [345.111]

Cook, John R.—**The Border and the buffalo.** An untold story of the Southwest plains. 1907 [978]

Danton, George H.—**The Chinese people.** New problems and old backgrounds. 1938 [951-A]

Davis, Colonel Marcellus L.—**The Stranger.** 1938 [799.25]

Deutschen Gesellschaft fur Wehrpolitik und Wehrwissenschaften. — **Jahrbuch fur Wehrpolitik und Wehrwissenschaften, 1939.** [Year book for military policy and military sciences, 1939.] 1939 [M 103-C.43]

Dewing, Brigadier R.H. — **National defence: The Army.** 1938 [M 103-C.42]

Dilts, Marion May.—**The pageant of Japanese history.** 1938 [952-A]

**Federal Reporter, Second Series.** Vol. 99 F. 2d: November 1938-January 1939. 1939 [345.41]

**Federal Supplement.** Vol. 24: September-December 1938. 1938 [345.41]

Ferius, Capitaine. — **La troisieme bataille de l'Aisne (27 mai-12 juin 1918) et la bataille du Matz (9-12 juin 1918).** [The third battle of the Aisne (27 May-5 June 1918), and the battle of Matz (9-12 June 1918).] 1938 [M 9403-J.44:8-G3]

Foerster, Lt.Col. Wolfgang. — **Mackensens briefe und Aufzeichnungen.** [Mackensen's letters and notes.] 1938 [M 9403-E4-E.43-B92 (MA)]

Foote, John Taintor. — **Look of Eagles.** 1916 [M 403-G1.73]

Foreman, Grant. — **Sequoyah.** 1938 [M 973-Q1-B92 (SE)]

France. Ministere de la Guerre:

**Les Armees francaises dans la grande guerre.** Tome V. [The French Armies in the World War. Vol. V.] 1938 [M 9403-E4-D.44-C]

**Instructions on liaison and signal communications in the field (1937).** Vol. I. Annex No. 2 to Instructions for the Tactical Employment of Large Units. (Translation from the French) 1938 [M 506-A4.44]

Frankau, Gilbert. — **Royal Regiment.** A novel of contemporary behaviours. 1939 [M 203-C.42-B7-F]

Franke, Generalmajor Herman. — **Handbuch der neuzeitlichen Wehrwissenschaften.** Dritter Band. 2. Die. Die Luftwaffe. [Handbook of modern military science. Vol. III, Part 2: The Air Force.] 1939 [M 104-B12]

Gelber, Lionel M.—**The rise of Anglo-American friendship, 1898-1906.** 1938 [327.73 (.42)]

**Generalfeldmarschall Graf von Schlieffen.** Die taktisch-strategischen Aufgaben aus den Jahren 1891-1905. (Dientschriften des Chefs des Generalstabes der Armee Generalfeldmarschalls Graf von Schlieffen. Erster Band). [Field Marshal von Schlieffen. The tactical and strategical lessons of the years 1891-1905. Works of the Chiefs of the General Staff of the Army. Vol. I.] 1937 [M 943-B92 (SC)]

Germany. Reichswehrministerium. — **Sanitatsbericht uber das Deutsche heer im Weltkriege 1914-1918.** II. Band: Der Sanitätsdienst im Gefechts- und Schlachtenverlauf im Weltkriege 1914-1918. [Sanitary reports of the German Army in the World War, 1914-1918. Vol. II: Sanitary service in the campaigns and battles of the World War, 1914-1918.] 1938 [M 9403-G21-C.43]

Grant, A.J. & Temperley, Harold. — **Europe in the Ninteteenth and Twentieth Centuries (1789-1938).** 1939 [M 940-A]

Graves, Robert & Liddell Hart.—**T.E. Lawrence to his biographers, Robert Graves and Liddell Hart.** (In 2 volumes) 1938 [M 942-B92 (LA)]

Great Britain. Committee of Imperial Defence. — **Order of battle of divisions.** Part 3A: New Army Divisions (9th to 26th). 1938 [M 9403-H6-C.42-G]

Griswold, A. Whitney.—**The Far Eastern policy of the United States.** 1938 [327.73 (.50)]

Le Guillou, Capitaine Louis. — **La Campagne d'Ete de 1870.** [The summer campaign of 1870.] 1938 [M 943-082-J3]

Halliburton, Richard. — **Book of Marvels: The Occident.** 1939 [910]

Halpin, Warren T. — **Hoofbeats.** Drawings and comments. 1938 [799.25]

Hanna, A.J. — **Flight into oblivion.** 1938 [M 9737-E3-C.75]

Harris, Herbert.—**American labor.** 1939 [331]

Hedin, Sven.—**The silk route.** 1938 [950]

Houghton, Samuel G.—**The writer's handbook.** 1936 [029]

Innes of Learny, Thomas.—**The Tartans of the clans and families of Scotland.** 1938 [929.242]

Ireland, Philip S. — **Iraq: A study in political development.** 1938 [956.7]

Ise, John. — **Sod and stubble.** The story of a Kansas homestead. 1938 [978.1]

James, Cyril L.R.—**World revolution, 1917-1936.** The rise and fall of the Communist International. 1937 [M 940-A]

Johnsen, Julia E. — **Chinese-Japanese War.** 1933 [M 951-A]

Johnson, Alan Campbell.—**Anthony Eden: A biography.** 1939 [942-B92 (ED)]

Kaltenborn, H.V. — **I broadcast the crisis.** 1939 [M 9437]

**Keesing's Contemporary Archives.** Weekly diary of world events. (In 4 volumes) 1939 [032]

Kirkpatrick, F.A. — **Latin America: A brief history.** 1939 [980]

Laski, Harold J. — **Parliamentary government in England.** A commentary. 1938 [354.42]

Lasser, J.K.—**Your income tax — how to keep it down.** 1939 [336.2]

Latourette, Kenneth S.—**The development of Japan.** 1938 [952-A]

Lawrence, T.E.—**The letters of T.E. Lawrence.** Edited by David Garnett. 1938 [M 942-B92 (LA)]

League of Nations.—**Armaments year-book, 1938.** 1938 [M 104-A6]

Linebarger, Paul M.A. — **Government in Republican China.** 1938 [951-A]

**Lunacy becomes us.** By Adolph Hitler and his associates. 1938 [943-A]

Lymington, Viscount. — **Famine in England.** 1938 [942-A]

MacNair, Harley F.—**The real conflict between China and Japan.** An analysis of opposing ideologies. 1938 [M 951-A]

Maurin, General. — **L'Armee moderne.** [The modern army.] 1938 [M 205-C.44]

McNair, Arnold Duncan.—**The law of treaties.** British practice and opinions. 1938 [M 007-J.42]

Medlicott, W.N.—**The Congress of Berlin and after.** A diplomatic history of the Near Eastern settlement, 1878-1880. 1938 [949.6]

Metcalf, Lt.Col. Clyde H.—**A history of the United States Marine Corps.** 1939 [M 8416-C.73-C]

de Monsabert, Lt.Col. de Goislard. — **En Relisant Bugeaud et Lyautey.** [On re-reading Bugeaud and Lyautey.] 1937 [M 964-04]

**Orbis encyclopaedia of extra-European countries.** A survey and directory of political, industrial, financial, cultural and scientific organisations in the countries of Africa, America, Asia and Australasia. 1938 [032]

**Oregon Trail.** The Missouri River to the Pacific Ocean. (American Guide Series). Compiled and written by the Federal Writers' Project of the Works Progress Administration. 1939 [917.8]

Orton, William.—**Twenty years' Armistice 1918-1938.** 1938 [M 940-A]

Pan, Stephen C.Y.—**American diplomacy concerning Manchuria.** Enlightening discussion of America's Far Eastern policy. 1938 [327.73 (.52)]

Parkes, Henry Bamford. — **History of Mexico.** 1938 [972-A]

Pauka, I. — **Breakthrough of the Polish Front by the 1st Cavalry Army in June 1920.** (Translation from the Russian). 1938 [M 9438-051]

Pemberton, W. Baring. — **Lord North.** 1938 [942-B92 (NO)]

Polo Association.—**Year book of the United States Polo Association, 1939.** 1939 [M 403-G7.73]

Poumeyrol, Capitaine. — **L'Armee Bienfait Social.** [Army as a social force.] 1938 [M 203-C.44]

Pratt, Helen. — **China and her unfinished revolution.** 1937 [951-A]

Preedy, George R. — **Child of Chequer'd fortune.** The life, loves and battles of Maurice de Saxe, Maréchal de France. Born 1696. Died 1750. 1938 [M 944-B92 (SA)]

Priestley, Herbert Ingram. — **France overseas.** A study of modern imperialism. 1938 [960]

Quigley, Harold S. & Blakeslee, George H.—**The Far East.** An international survey. 1938 [950]

Rappard, William E.—**The crisis of democracy.** 1938 [354]

Reich, Nathan. — **Labor relations in Republican Germany.** An experiment in industrial democracy, 1918-1938. 1938 [331]

Renshaw, Anne Tillery.—**Addressing the public.** A manual for professional speakers. 1937 [808.5]

Riggs, Arthur Stanley.—**The romance of human progress.** 1938 [901]

Rippy, J. Fred.—**America and the strife of Europe.** 1938 [327.73 (.40)]

Royal Empire Society.—**The crucial problem of Imperial development.** 1938 [942-A]

Rudin, Harry R. — **Germans in the Cameroons, 1884-1914.** A case study in modern imperialism. 1938 [967.11]

Simon, Colonel A.D. — **Das Infanterie-Regiment "Kaiser Wilhelm, Konig von Preussen" (2. Wurttemb.) Nr. 120 im Weltkriege 1914-1918.** [The Infantry Regiment "Kaiser Wilhelm, King of Prussia" (2d Wurttemburg) No. 120 in the World War, 1914-1918.] 1922 [M 9403-G4-C.43-A5]

Smalley, Lieut. Colonel H.R.—**An analysis of horsemanship.** 1932 [M 403-G1.73]

Stewart, F.A.—**'Cross country with hounds.** 1937 [799.25]

Strakhovsky, Leonid I.—**The origins of American intervention in North Russia (1918).** [M 9403-J.57]

Summerhays, R.S. — **Elements of riding.** 1937 [M 403-G7.42]

Timperley, H.J. — **Japanese terror in China.** 1938 [M 951-A]

Toynbee, Arnold J. — **Survey of international affairs, 1937.** (In 2 volumes) 1938 (94-B)

Tunstall, Brian.—**William Pitt, Earl of Chatham.** 1938 [942-B92 (PI)]

Vallentin, Antonia. — **Leonardo da Vinci.** The tragic pursuit of perfection. (Translation from the German) 1938 [945-B92 (VI)]

Van Loon, Hendrik Willem. — **Our battle.** 1939 [943-A]

Wales, Nym. — **Inside Red China.** 1939 [M 951-A]

Walsh, Maurice. — **Sons of the Swordmaker.** 1939 [813]

War Department. — **Report of the Surgeon General, U.S. Army to the Secretary of War, 1938.** 1938 [M 421-C.73-D]

Wardell, Morris L.—**A political history of the Cherokee Nation, 1838-1907.** 1938 [M 973-Q1-A]

de Watteville, Lieut. Colonel H. — **Lord Roberts.** 1938 [M 942-B92 (RO)]

Wedgwood, C.V.—**The Thirty Years War.** 1938 [M 940-221]

Wenig, Richard. — **Kriegs — Safari.** [The War — Safari.] 1938 [M 9403-J.6:E1.43]

**Weyers Taschenbuch der Kriegsfotten. XXXIII. Jahrgang 1939.** [Handbook of the battle fleets. Vol. XXXIII, 1939.] 1939 [M 8205-A.43]

Wheeler-Bennett, John W.—**The forgotten peace: Brest-Litovsk, March, 1918.** 1939 [M 9403-C7-J2-C]

White, T.H.—**The sword in the stone.** 1939 [813]

Whittemore, Margaret. — **Sketchbook of Kansas landmarks.** 1937 [978.1]

Wissler, Clark. — **Indian cavalcade, or life on the old-time Indian reservations.** 1938 [970.1]

Young, Lieut. Commander Edgar P. — **Czechoslovakia, keystone of peace and democracy.** 1938 [M 9437]

Young, Arthur Morgan. — **Imperial Japan, 1926-1938.** 1938 [952-A]

Yvon, M.—**What has become of the Russian Revolution?** 1937 [947-A]

# Academic Notes

*Current School Material, Which Affects Instructional Procedure or Tactical Doctrines*

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## Doctrines of the Defensive

LT. COL. G. R. MEYER, C.A.C.

There exists frequently among the uninformed an impression that generalship is a gift, that the successful general knows by intuition just what steps to take to meet any situation. Your experience and study, I am sure, have brought home to you that this impression is wrong. You realize that the profession of arms involves the logical application of acquired knowledge. There is no place in the military machine for the commander who plays hunches, for the man who makes psychic bids. Such departures from reasoned conclusions cost the lives of men and can never be

justified. There must be logic back of our every action; there must be reason for the doctrines which we teach at this school. I ask you, therefore, to give particular attention to my line of reasoning this morning. You may not agree with me throughout but you will at least determine where and why you disagree with me and that will be of primary importance to you.

We take up this morning the subject of defensive action. I wish to emphasize that this discussion is general and applies to all forms of defensive action, the defense in one position, the delaying action, the withdrawal. Your schedule prescribed certain parts of texts for study and reading in preparation for this conference. They are all general in their nature because I wish to present the broad picture of defensive operations. You will have ample opportunity to study the various operations in detail as the course progresses.

What I have to say may be found in the texts covering defensive operations. It is, therefore, the doctrine of this school. You will not, however, find it in the texts in the exact form in which it will be presented. I have tried to bring together the important basic doctrines of defensive action and shall try to present them to you through a process of reasoning rather than by a mere enumeration of a number of tenets. A mimeograph outlining this conference has been distributed.

Do not look upon these doctrines as fixed rules of action, all of which must be applied with equal rigidity to every situation. They are flexible in that their importance may vary within wide limits in different situations. They are inflexible to the extent that you may not violate them without a compensating gain. They are guides to your process of reasoning in your estimates. They are question marks in testing the soundness of your conclusions.

For convenience I propose to discuss the doctrines under three headings:

1st—The decision to adopt defensive action.
2d—The selection of the defensive area.
3d—The organization for and conduct of the defensive action.

War is the process used by one adversary in imposing his will upon his opponent by the use of force. It would be necessary to enter the realm of national as well as military strategy in order to indicate how this force may be applied. Such an investigation is without the province of this school. We are concerned here solely with considering how best to conduct the military operations which are considered a necessary part of the application of our force. We are concerned with the tactical phases of operations, with carrying out certain missions assigned to us by our military superiors. The assumption must be that if each commander accomplishes his mission successfully the entire military effort will be successful and the war will be won.

It is obvious that the question of decision as to whether or not defensive action should be adopted does not enter the problem when we are carrying out an operation whose nature has been specified by higher authority. If, in a certain situation, we have been directed to make an attack, to defend a certain area, to hold a certain key point in spite of losses, or to conduct a specified operation of any kind, there is no decision on our part except as to how we will carry out the task assigned.

The more difficult case arises when we have a mission which permits us freedom of choice in the basic type of action which we propose to employ; when we are on our own, so to speak, knowing only the results which our superior commander desires and for which he will hold us responsible.

Certain basic characteristics of defensive operations become apparent if we delve deeply enough. The commander of a large force desiring to conduct offensive operations decides where he will apply his greatest strength. In order to insure the availability of the force where he expects to make his blow felt he may have to reduce the strength elsewhere to such an extent that offensive action in the area of reduced forces is impracticable. In that area, therefore, he may resort to defensive action since it requires less force; in that area offensive action may be abandoned until the enemy is weakened or until additional forces can be brought in.

The commander of a force conducting defensive operations must, unless his force is greatly superior to that of the enemy, husband his strength. He must hold available the forces he considers necessary to meet the enemy wherever he may strike. Thus again we find that a part of the battle front must be weakened in order that strength may be available for use where it is most needed. In all parts of the area, therefore, the defending forces must conduct their defensive operations until they can be reinforced.

Defensive operations imply the possibility of retrograde movement or, at best, a holding in place. No advance is contemplated. On the contrary it may be possible for the defending force even to yield ground and still accomplish its mission. But it will be obvious that there must be a limit on the amount of retrograde movement permitted. If a force conducting defensive operations is free to retire indefinitely there can be no conceivable reason for its presence except possibly for deception.

I believe that the preceding discussion brings out the following characteristics of defensive action:

It is designed to economize on force.

In offensive warfare it is resorted to in order to facilitate some other operation or until some anticipated condition eventuates.

In offensive warfare and sometimes in defensive warfare it is limited in the time of its duration. It is always limited in the extent of retrograde movement permitted.

We may say, therefore, that the tactical defensive operation whether it be the defense of a position, a withdrawal, or a delay in one or several positions, should be viewed in its entirety as an operation which is to be conducted in a certain area for a certain period of time. The rear limit of the area and the time limit on the duration of the operation are stated in or are deducible from the mission. The fact that there are time and space limits to the defensive operation has an important bearing upon the decision to adopt defensive action as well as upon other decisions incident to such action.

The commander of an independent force may be required to decide between offensive and defensive action under many different conditions. His force may be engaged with an enemy who is proving too strong and he may feel

that he must disengage his force if it is to escape destruction. He may encounter an enemy force which he could defeat but which is capable of being reinforced before he could insure that defeat. He may be confronted by a superior force but know that his own force will be increased in the near future to such an extent as to insure successful offensive action. The commander must decide what form his action will take in each case. Not only must he decide between offensive and defensive action but, if his action is to be defensive, he must as a corollary to the decision select the class of defensive action to be employed.

This decision can be reached only by a careful estimate of the situation and there is no short cut. It appears possible, however, to deduce certain doctrines which may serve as guides in making the estimate. Bear in mind that we are discussing the case where the commander has a mission to perform and the class of action to be adopted has not been prescribed by higher authority. The commander considers what general plans of action give promise of enabling him to accomplish that mission. We have already seen that there are time and space limits to defensive action and that these may be deduced from the mission. The mission must be carefully examined and these limits determined. The commander must then study the situation to determine whether or not a plan to adopt defensive action will permit him to remain within those limits. If his study indicates that he cannot remain within those limits, defensive action obviously will not enable him to accomplish his mission and must be discarded as a practicable plan of action. If, however, his study leads him to believe that some form of defensive action will enable him to comply with those limits he is free to give further consideration to that plan as a possibility. We may state the doctrine thus:

The decision to adopt defensive action must insure compliance with the limits in time and space on retrograde movements as prescribed by the mission.

Compliance with this doctrine is mandatory if the commander is to accomplish his mission by defensive action. But this does not eliminate the alternative of offensive action. Assuming that he can comply with the first doctrine by defensive action does this invariably indicate that he will adopt the defensive? I believe not. There are certain disadvantages to the defensive which should not be accepted without good and sufficient reason. No more should a commander resort to offensive action simply because he thinks he can defeat his opponent. Some one always gets hurt in a battle and a command will suffer losses in an attack even though it be successful.

There is little doubt what the commander should do if offensive action is manifestly impracticable and combat cannot be avoided. If he is confronted with a force which he cannot hope to attack successfully he must use defensive action. But even if the opposing force were such that he had a chance of defeating it he would still have to consider the probable cost and then decide whether it was too great under the conditions existing at the time.

The decision to defend, therefore,

> Will be justified when the mission demands combat and the situation indicates that offensive action is impracticable or so costly as to be prohibitive under the circumstances. Note: This does not apply in those cases where the mission is such that offensive action must be carried out irrespective of possible difficulties or losses.

We recognize a special case of the decision to adopt defensive operations as a preliminary step to an offensive. Occasions may arise when a commander finds himself in a situation in which, for the time being, the offensive is impracticable but he can foresee a change which will permit him to take the offensive. Pending that change he finds it necessary to adopt defensive action. We have at this school used the term active defense to designate such an operation. The defensive phase of the operation may be forced upon the commander by temporary inferiority or it may be deliberately adopted as a method of creating a situation which will facilitate the proposed offensive. The defensive operation may be any one of the several types, the defense of a position, a withdrawal, delay in one or more positions. Regardless of the nature of the defensive operation the commander plans from the outset to turn to the offensive at a later stage. This is the principal difference between the active defense and the defensive operation which is purely defensive for in the latter operation the counteroffensive may be undertaken should an opportunity present itself but is secondary to the defensive. This use of the defensive operation as a preliminary to the offensive will be covered in later conferences and map exercises.

Let us recapitulate these doctrines.

The decision to adopt defensive action:

*a.* Must insure compliance with the time and space limits on retrograde movement as prescribed in or deduced from the mission.

*b.* Is justified when the mission demands combat and the situation indicates that offensive action is impracticable or so costly as to be prohibitive in the circumstances, provided of course that his mission is not such that offensive action is mandatory.

Note: The active defense may be employed as a ruse to facilitate offensive action.

Do not think for an instant that you now possess the answer as to when to attack and when to defend. Far from it. Your judgment will be given ample exercise in determining whether or not it is impracticable or too costly to use offensive action. It is not easy to satisfy yourself that defensive action on the available terrain will permit you to remain within the prescribed limits of retrograde movement. You will often be faced with the necessity for deciding whether to adopt defensive action on terrain which you can get without fighting or to attack to get better terrain on which to fight the defensive action.

The choice of the class of defensive action to be employed is made by the commander after considering the limits imposed upon him by his mission and the possibilities of the various classes of defense in the terrain available under the conditions existing at the moment.

We will assume that the commander has decided to adopt defensive action. He has determined the length of time that action must continue and the rear limit of the area within which it is to be conducted. He knows how far he can advance without having to resort to offensive action. Within the area fixed by those limits he must choose that

portion of the terrain on which he will conduct the action. He must evaluate the possibilities of the terrain in the different classes of defensive action which may be possible in the situation. He must determine which combination of defensive action and available terrain will give greatest promise of permitting him to maintain himself within the prescribed limits for the necessary length of time. The doctrine may be stated thus:

> The area selected for the defensive operation will insure compliance with the time and space limits on retrograde movement.

The defensive action is designed to keep the enemy from carrying out any action which would defeat the mission of the defender. The defender must therefore so choose the defensive area that failure on the part of the enemy to attack the area will permit or at least facilitate the accomplishment of the defender's mission. In some situations this may be accomplished by compelling the enemy to attack in order to use the only available routes of advance. In other situations it may be necessary to defend a terrain feature the retention of which is necessary to the defender. The essential point is that the defensive area be of such importance that the enemy must take cognizance of the fact that it is in the defender's possession or automatically permit the defender to accomplish his mission. The defender is concerned only with accomplishing his own mission. He does not act with a view to defeating the enemy's mission unless it happens to conflict with his.

The doctrine may be stated thus:

> The area selected for the defensive operation will be such as to force the enemy to take action to eject or neutralize the defender if he is to keep the defender from accomplishing his mission.

Since the defensive is of limited duration and is to be followed by some other action, the desirability of being prepared for the future action is apparent. If the nature of the future action can be foreseen in its details it may exercise an important effect upon the selection of the area for the defense. This must not, however, be permitted to exercise a controlling influence if by so doing it may jeopardize the success of the defensive action itself. The doctrine may be stated thus:

> The area will facilitate future action if this can be done without jeopardizing the current operation.

The defender, weaker in combat power, looks to the terrain to give him the strength needed to withstand attack. He bases his hopes for success upon the occupation of strong terrain features in front of and within which he can place artillery and small-arms fire. He chooses terrain which offers the greatest possible handicaps to the enemy in his attack. To minimize the danger of local enemy successes he defends in depth including reserves so disposed as to be available for use whenever needed. The basic elements of the defense are resistance, depth, and mobility of the reserves. The relative importance of these three varies with the class of defensive action. Manifestly, for example, the necessity for resistance is not as great in delaying action on successive positions as it is in the case of a prolonged defense in place. These differences and their effect upon the nature of the defensive area to be selected for the different classes of defensive action will be covered in later conferences and map exercises. The doctrine involved is:

The terrain of the area will facilitate the class of defensive action contemplated.

The defensive operation is to be carried out by the available troops. These forces can cover only a certain amount of terrain in frontage as well as depth. Both frontage and depth may vary with the terrain and the nature of the defensive action. To attempt to use too great an area may result in weakening the entire defensive force. To use too small an area needlessly restricts the freedom of action of the defender.

The doctrine is:

The area selected will be of suitable size in frontage and in depth for the force available in the action contemplated.

We may summarize the doctrines:

The area selected for the defensive operation:

1. Will insure compliance with the limits in time and space on retrograde movement as prescribed by the mission.
2. Will be such as to force the enemy to take action to eject or neutralize the defender if he is to prevent the defender from accomplishing his mission.
3. Will facilitate future action if this can be done without jeopardizing the current operation.
4. Will be on terrain which will facilitate the class of defensive action contemplated.
5. Will be of suitable size, frontage and depth, for the force available in the class of defensive action contemplated.

We consider next the organization for and the conduct of the defensive action. It is impracticable to make any extensive analysis of the various classes of defense this morning. It is possible, however, to state certain doctrines which will be found to apply in varying degree to all classes of defensive action. These are the threads which run through the entire fabric of defensive operations. Upon these basic threads the varying patterns of the different classes of defensive action are woven.

We must bear in mind that there are certain advantages which a commander hopes to capitalize when he assumes the defensive. The text enumerates those advantages.

*Q.*—What are they?

*A.* 1. Opportunity to choose ground which will permit full development of the fire power of weapons.
2. Ability to increase the defensive strength by preparation on the ground.
3. Possibility of using concealment and cover to decrease vulnerability and facilitate surprise.

What can the commander do to capitalize the advantages of the defensive? In the final analysis the advantages derive from the fact that the defender can use the terrain to decrease his own vulnerability and increase the vulnerability of the enemy.

The defender hopes to be able to carry his action to a successful conclusion by fire power alone. He must be pre-

pared to use movement if necessary but his first reliance is the coordinated fire power of all his weapons. To this end he seeks to insure that his entire front will be covered by fire to as great a distance toward the enemy as conditions will permit. To make the fire more effective automatic weapons are sited for flanking fire. Obstacles are placed where they will delay the enemy while he is under effective fire. Supporting weapons are prepared to place fires on areas which cannot be covered effectively by the fire of small arms. All this the defender does to make the enemy's advance so costly that his will to win will be broken before he can reach the defender's line.

This then is the first doctrine in the organization for and the conduct of the defense:

Cover the front with fire.

I have already indicated that defensive action is based upon the desire to economize on force. The commander of a defending force must save manpower whenever he can. He must therefore spread the units of his command over wider frontages than would be permitted in purely offensive action. If he were to distribute his forces evenly over the entire front the lines would be so thin that the resistance would be relatively weak everywhere. To avoid this he concentrates his forces in groups on the strong key points where the terrain makes them more difficult to dislodge. These key points are strengthened for determined resistance. The intervals between these strong localities are covered by fire. They must be close enough to each other to insure effective fire in the intervals between them. As long as these strongly held localities are intact the attacker can have but limited success if he breaks through the intervals. It is not unlike the defense which the line presents in a football game. As long as the guards and tackles, the strong points, hold, the opponents may gain a little but they are stopped quickly by the secondary defense which corresponds to our supports and reserves.

Our second tenet then may be stated:

Occupy the strong key points in the terrain.

Proper siting of weapons is essential to successful defensive action but it must be supplemented by effective observation if the full value of the fire power is to be realized. This observation is essential for artillery weapons and under certain circumstances, for some of the machine guns and other infantry weapons. Observation over all the terrain toward the enemy to the limit of range of the various weapons would be the ideal but, like most ideals, is almost never attainable. Observation over the terrain within the defensive area is also important, particularly where the defensive action is carried out in one position. The nature of the observation required varies in different classes of defense but it is always needed.

Conversely the defender should try to insure that the enemy does not have observation over the defended area. This happy state of affairs is not always easy to assure.

The defender should make as certain as possible that he can retain the observation as long as it is essential to his action. The defensive front, if it is to be held resolutely, should be far enough in advance of the essential observation to make certain that minor successes by the enemy will not jeopardize its retention.

Our third tenet can be stated:

Insure retention of essential observation.

We have already seen that the defender seeks to extend his fires as far toward the enemy as his weapons will permit. From the time the enemy enters this zone of fire until the action is concluded the defender tries to keep the attacker under fire. As the attacker approaches the defender's line more and more fire power is concentrated upon him. These fires must be continued even if the attacker succeeds in penetrating the line of strong points. In that event he should be brought under concentrated fire from elements farther to the rear. These fires interfere with attempts by the attacker to outflank the strong points of the front line. Fires from all types of weapons are needed here just as they are on the defender's front. To accomplish this some weapons must be so sited that they can deliver these fires. There is, therefore, a necessity for depth in the defensive dispositions, depth in the strong terrain to be occupied, depth in the disposition of artillery, all to insure depth in the defender's fires. This depth is of greater importance in some classes of defensive action than in others but its necessity must always be considered and it can be sacrificed only when justified.

We may say therefore that the defender will:

Occupy the defensive area in depth.

The elements of the defense thus far considered have had for their object the increase in the vulnerability of the enemy. What can the defender do to decrease his own vulnerability?

The defender has chosen ground such that he can put his weapons in position and deliver his fires without any necessity for moving them. The men on the ground can use their weapons without having to move about and expose themselves. This fact enables the defender to dig himself in at the spot where he will fight. He can prepare material cover which will protect the individual as well as the weapons. If time permits the ground can be so completely organized that movement can be made possible without undue losses. Not only can material cover be provided but camouflage and other forms of concealment can be availed of to make the defender a less conspicuous target.

This organization of the ground will also include the clearing of the fields of fire, the installation of obstacles and other steps which make the enemy more vulnerable.

To capitalize the advantages of the ground the defender should:

Organize the ground.

We have seen how the defender can capitalize the advanatges of defensive action. The commander hopes also to be able to overcome or at least minimize the importance of the disadvantages of defensive action.

*Q.* What are these disadvantages?

*A.* 1. Freedom of action is partially abandoned.
2. Enemy can choose time and place for attack.

What can he do to overcome or minimize the disadvantages? These disadvantages arise from the fact that, by committing himself to the ground, the defender has yielded

the initiative to the enemy and has curtailed his own freedom of action.

If the defender could gain complete information of the enemy's movements and dispositions and could then be prepared to move to meet any action of the attacker the disadvantages would be overcome entirely. Manifestly this is impossible of accomplishment. The defender does commit a part of his command to the ground and that part at least is not available for ready movement. The greater the part of his command which can be prepared to move readily and quickly to meet the enemy whenever or wherever he attacks the less will be the disadvantage to the defender. That portion of the defender's force available for movement to any part of the defensive area constitutes the reserve. Its size will vary with the class of defensive action and the conditions surrounding the action but a mobile reserve will always be needed.

We may say therefore:

Insure availability of mobile reserves.

The strength of the defense with modern weapons is fully recognized. The attacker will not willingly accept the losses which will attend a frontal attack against an organized defense. He will resort to maneuver, if that is permissible under the existing conditions, and will seek to make a flank attack. In any form of defensive action the security of his flanks will therefore be of primary concern to the defender. The fact that one or both flanks are weak must not be permitted, however, to cause the defender to lose sight of the fact that the attacker may deliver his attack elsewhere. The only safe course for the defender is to keep a running estimate of the enemy's capabilities of attack and be prepared at all times to meet them. To the extent practicable the defender should try to limit those capabilities by the use of reconnaissance detachments and covering forces. By the use of cavalry and aviation he will seek information of enemy movements and dispositions in order to determine with more accuracy the enemy's capabilities. By these actions he minimizes the effect of the attacker's advantage in possessing the initiative.

This doctrine may be stated:

Determine enemy capabilities and limit them to the utmost.

Let us now recapitulate these doctrines of the organization for and conduct of the defense:

1. Cover the front with fire.
2. Occupy key points in the terrain.
3. Insure retention of essential observation.
4. Occupy the defensive area in depth.
5. Organize the ground.
6. Insure availability of mobile reserves.
7. Determine and limit enemy capabilities.

I believe that you will readily recognize that all these doctrines state what is to be done. I have tried to bring out the reasons why they are important. In map exercises to come during the course you will have opportunities to apply these doctrines. You will see different methods used in applying the same doctrine to different situations. You are likely to lose sight of the fact that the method is a means to an end rather than the end itself. Too frequently the student is more interested in the method than in the reason for the adoption of that particular method in the given situation. Later when he is confronted with a new situation he tries to use the same method whether it fits the new conditions or not.

Bear in mind the doctrine you are trying to apply. Use a method which will enable you to make the doctrine effective under the given conditions. You may find that you have not used the same method as that used in the school solution but that is no indication that your method is wrong. Above all be perfectly honest with yourselves and be certain that you have sound reasons for the methods you adopt.

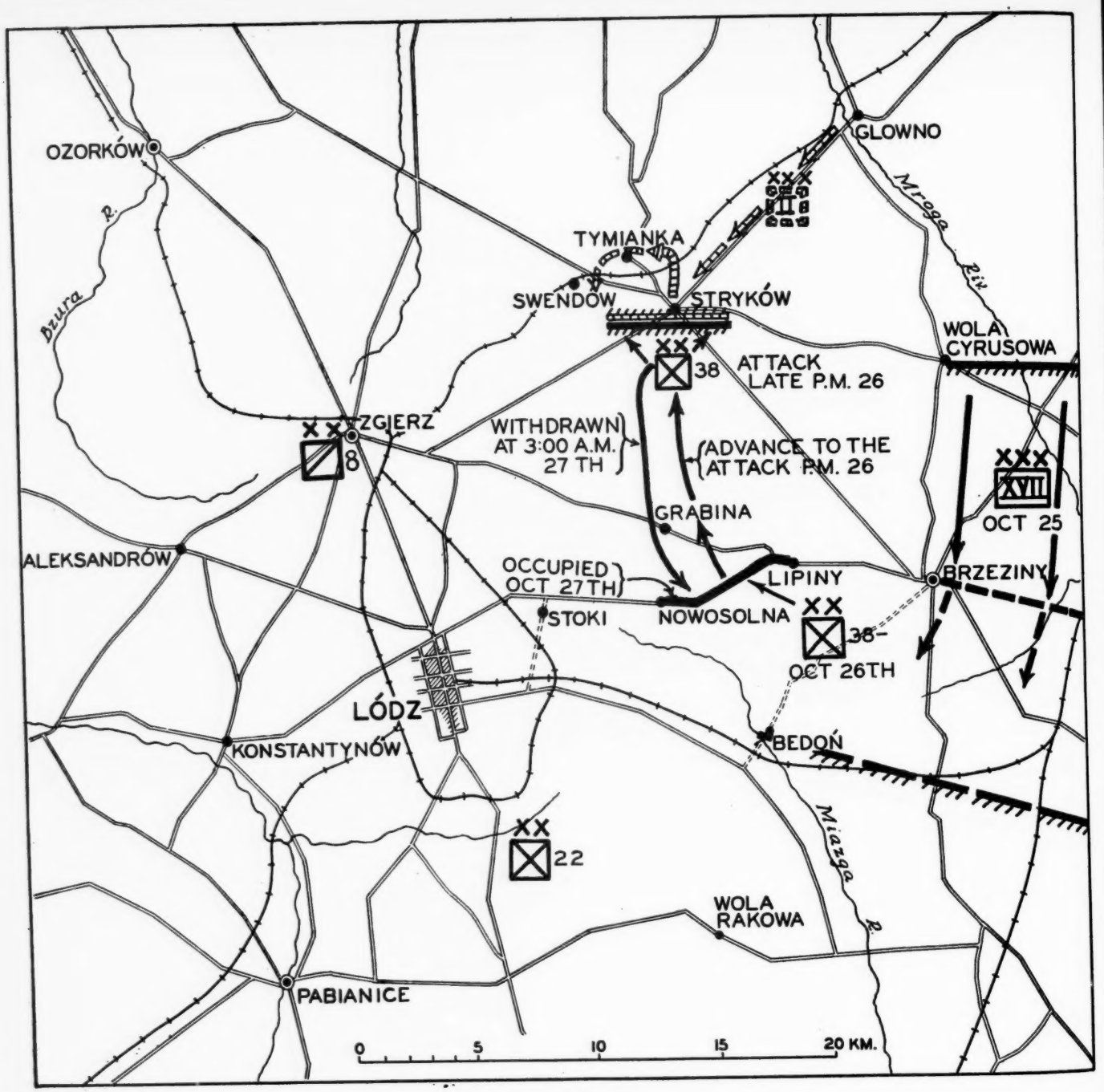
There are certain features of defensive action which I believe may well be brought to your attention at this time. I have indicated the importance to the commander of the defending force of determining the enemy capabilities. This involves a very high standard of operation on the part of the information gathering agencies and a keen sense of the importance of information on the part of the intelligence officers. Negative as well as positive information will be of great value. In one command post exercise the G-2 of a defensive force received two items of information which should have been a definite indication that the attack was coming from a certain flank. His failure to grasp the significance of those scraps of information was fatal.

No matter how gifted G-2 may be or how nearly perfect he may be in sensing the opponent's moves his work may be entirely wasted unless the commander has the courage to make decisions which may seem like a gamble and unless the G-3 can insure that the commander's plans are executed expeditiously.

In practically all forms of defensive action and in the case of the defense in one position, particularly, the commander is, in effect, wagering that he will be able to determine the enemy's movements in ample time to enable him to move his reserves where they are needed. It is hardly necessary to point out that this may be extremely difficult and in any event will require staff work of a very high order. Communications must not fail if the defense is to be successful.

I wish to conclude this conference with a general summing up of what I have tried to bring out during the discussion.

The defensive operation arises from the necessity to economize force. It is limited in its duration and in the area within which it may be conducted. The class of defensive action to be conducted will be chosen to fit the terrain, the force available, and to comply with the time and space limits prescribed for the operation. The defensive action is characterized by resistance, depth and mobility of reserves. More than most military operations it demands perfect functioning of the G-2, G-3, commander team from its inception until the enemy has been defeated. Regardless of the skill of the commander and staff the defense will stand or fall with the spirit, the endurance, and the determination to hold possessed by the troops.




SKETCH No. 1

# Delaying Action

**Historical Illustration**

1. INTRODUCTION.—Delaying action is an operation in which a force seeks to impede the advance of an enemy without becoming so seriously engaged that it cannot extricate itself without the assistance of other forces or without losses not justifiable in the circumstances. In effect, delaying action seeks to trade space for time. It is essentially a defensive maneuver and as such is conducted in accordance with the basic doctrine of defensive action given in Doctrines of the Defense in this issue of the C & G S School Military Review. There are, however, certain doctrines peculiar to the delaying action itself. These may necessitate a modification in the application of the basic doctrines of defensive action. The doctrines of delaying action are as follows:

*a.* Offer continued threat of serious opposition.

*b.* Gain time by compelling the enemy to use maximum time and strength in operating against the delaying force.

*c.* Insure ability to break off the operation before becoming decisively engaged with the enemy.

*d.* Execute planned withdrawals under conditions which permit orderly movements to the rear.

The effect which these doctrines exert upon the basic doctrines of defensive action may be illustrated by considering the basic doctrine of "cover the front with fire." The second doctrine of delaying action indicates that "covering the front with fire" in this operation involves fire at long ranges. Our third doctrine indicates that we are more concerned with fires at long and medium range than at close range because we intend to break off the operation before we become so seriously engaged that close-in fires become necessary.

The amount of delay which it may be necessary to obtain upon any position will govern the extent to which the force will permit itself to become closely engaged. The more close the engagement, the more does the action on that particular position approach the defense in one position, the essential difference becoming that of the length of time the position is to be held.

With a view to presenting an historical example of delaying action, search was made for an example involving a force comparable to our infantry division, the action taking place in modern times. The accompanying narrative of the actions of the German 38th Division on Oct. 26-29, 1914, is such an example.

2. ACTIONS AND OPERATIONS OF THE GERMAN 38TH DIVISION, AT LODZ FROM 26TH TO 29TH OCTOBER, 1914 (CAMPAIGN IN SOUTH POLAND).—The actions and operations of the German 38th Division, at Lodz from 26th to 29th October, 1914, furnish an excellent example of a successful execution of a delaying action by means of a combination of offensive and defensive operations.

*General situation.*—The general situation was as follows. In the middle of October, 1914, on the Eastern Front, the XI German Corps was hastily withdrawn from the right flank of the German Ninth Army in the vicinity of Ivangorod—Warsaw and moved behind its left flank in the vicinity of Lodz, for the reason that the Ninth Army was threatened with an envelopment by an entire Russian Army. The general situation compelled the retreat of the Ninth Army, whose left flank (XVII Corps) was located, on October 25th, near Wola—Cryusowa (about 24 kilometers northeast of Lodz) (see Sketch No. 1).

On October 26th, in order to make this retreat possible in face of the threatening danger at Lodz, two divisions were placed in readiness as follows: The 38th Division of the XI Corps on the line: Lipiny—Nowosolna (northeast of Lodz), the 22d Division farther to the rear and the 8th Cavalry Division in the vicinity of Zgierz, to prevent attempts of envelopment on the part of the enemy who had already begun to feel his way via Strykow (about 11 kilometers north of Lipiny) (see Sketch No. 1).

The weather had been rainy, roads were wet and muddy.

*Continued operations of the 38th Division on October 26th.*—(See Sketch No. 1.)—Toward noon, 26th October, G-3 of the Ninth Army arrived at the headquarters 38th Division, directed that the enemy be delayed, to enable the left of the Ninth Army to continue its withdrawal. The staff officer signified that an advance of the division would be highly desirable in the interest of the general situation of the army.

The 38th Division thereupon advanced to the attack upon a wide front, in the direction of Strykow, and soon encountered the II Siberian Corps. The energetic advance of this division, which was solely a demonstration, caused the Russians to retreat in a northly direction. The division came to rest south of Strykow.

*Operations on 27th October.*—(See Sketch No. 2.)—Due to vulnerability of the flanks of the division and the uncertainty of the situation, the division was withdrawn at 3:00 AM, October 27th to a new position a few kilometers south of Grabina, where it dug in. (Probably the same position the division occupied on the 26th.)

On the strength of reports that superior hostile columns were advancing northeast of Strykow, the 38th Division received orders at 3:00 PM, 27th October, to attack in the direction of Strykow—Swendow.

Despite great fatigue, the troops (division) advanced vigorously and with the support of the artillery (two regiments), captured Strykow, which was occupied by hostile infantry.

The 96th Regiment advanced beyond the town to cover the consolidation of the captured position. The Russians immediately counterattacked with superior forces, and after a fire fight lasting one hour the Russian counterattack broke down close in front of the firing line of the 96th Regiment, due to the superior fire action of the Germans. Upon the failure of the Russian counterattack the 96th Regiment and the 94th Regiment were fired upon from the houses and church in Strykow by concealed Russian soldiers. Both German regiments mopped up the town.

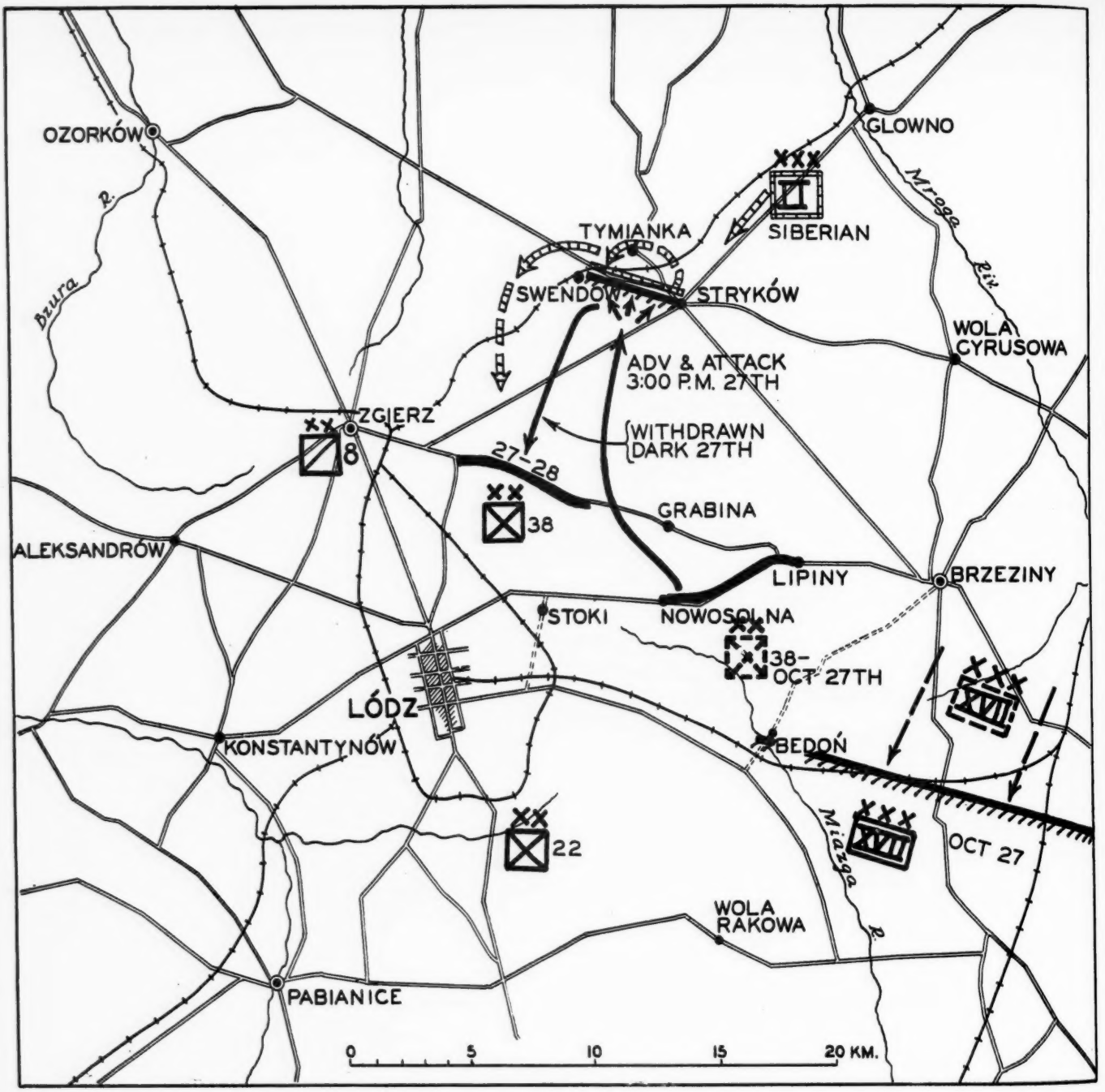
The vigor with which the 38th Division advanced and attacked a numerically superior force had, no doubt, caused the Siberian Corps much surprise as well as delay. The 38th Division was continuing to accomplish successfully its mission of delaying the Russian forces. As a result, the left flank of the Ninth Army (XVII Corps) was enabled to continue its retreat without hindrance from Brzeziny in a southwesterly direction toward Bedon.

Due to the extremely dangerous situation facing the 38th Division, exposed flanks and lack of information regarding the actions of a vastly superior enemy, the division was again withdrawn at dark, 27th October, in the direction of Lodz.

*Operations on 28th October.*—(See Sketch No. 3.)—The early morning of the 28th found the 38th Division in a position half way between Strykow and the northern exit of Lodz. This position was improved (troops dug-in) and prepared to delay the enemy advancing from north.

The situation grew more threatening. The enemy followed and an artillery battle developed. During the course of the day the enemy continued his attempts at envelopment and threatened the left flank of the division, which up to then had, at least in some measure, been covered by the 8th Cavalry Division, which was located at Zgierz. On the evening of the 28th, however, the 8th Cavalry Division was compelled to withdraw in a southwesterly direction, being opposed by superior hostile cavalry forces.

We see that the operations of the 38th Division on the 28th had been entirely defensive and the commander had successfully held the hostile forces during daylight hours, by employing his entire division on one partially intrenched




SKETCH No. 2

position. Apparently the division commander of the 38th Division contemplated holding this position on the 29th. Sometime during the night of 28-29 October the German division commander was informed of the forced withdrawal of the 8th Cavalry Division.

What changes will the action of the 8th Cavalry Division have upon the plans of the 38th Division commander for the 29th?

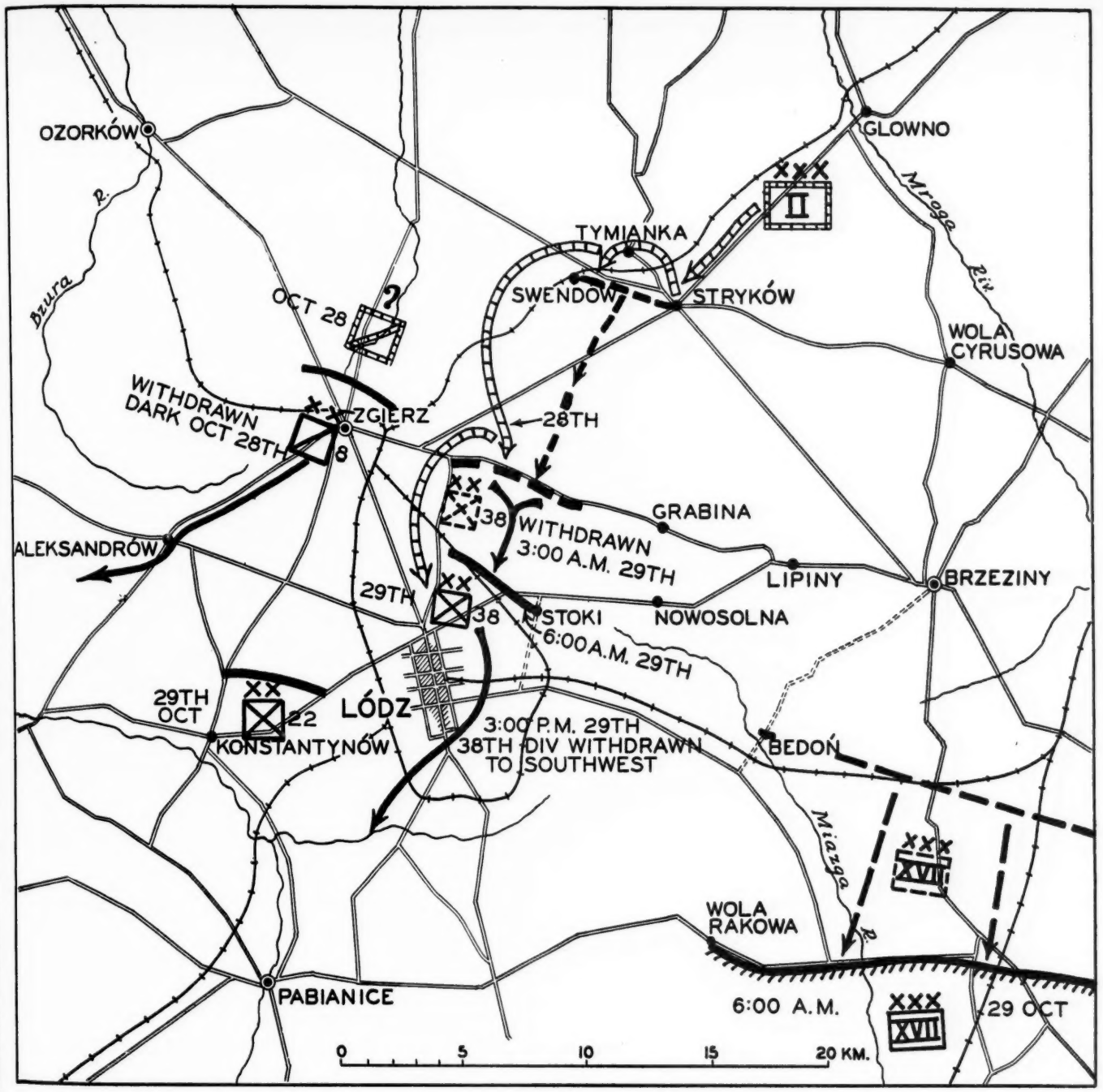
*Operations on 29th October.*—(See Sketch No 3.)—As a result of the withdrawal of the 8th Cavalry Division the left flank of the 38th Division was dangerously exposed. Therefore the 38th Division commander was forced to change any plans he may have had to hold and defend the position occupied on the 28th.

The 38th Division commander decided the night 28-29 October to withdraw to a position near Stoki. The withdrawal to begin about 3:00 AM, 29th.

At 6:00 AM, 29th, the division was located on the heights near Stoki facing toward the northeast. The 22d Division was placed in position west of Lodz.

At 6:00 AM, 29th, the left flank of the Ninth Army (XVII Corps) had reached the village of Wola Rakowa, 12 kilometers farther to the south. The danger for the army had been removed, due to the clever action of the XI Corps and especially the 38th Division.

The 38th Division held its position until 3:00 PM, 29th. There was no attack by the Russians due, probably, to the fact that they dreaded an attack against an apparently forti-




SKETCH No. 3

fied position without thorough preparation against an enemy who had already proven that he was capable of making a determined defense.

The 38th Division, having accomplished its mission of protecting the left flank of the Ninth Army during its retirement, was withdrawn at 3:00 PM, October 29th, farther to the southwest.

In checking this operation of the 38th Division we find the following astounding facts. From the afternoon of the 26th to 3:00 PM, 29th, the division marched 63 kilometers, attacked successfully twice, and organized and held on three positions, thereby delaying a vastly superior force of Russians; a record of which any division might well be proud.

3. ANALYSIS OF THE OPERATION.—Study of the situation as it existed on the afternoon of October 26th indicates that the II Siberian Corps was such a serious threat against the flank of the Ninth Army that any force sent to conduct delaying action would have little or no space to trade for the needed time. It is not surprising therefore, to find that an attack was suggested by higher authority. If successful it would check the enemy and thus gain time without yielding space of which there was so little. The attack was more in the nature of a counterattack since it was designed to check and disconcert the enemy and cause him to be more cautious in resuming his advance. The withdrawal during the night of 26-27 extricated the division from a situation which might have become very serious the next day had the defense

of the advance position been attempted. On the 27th the amount of space available for trading purposes was still too little to justify a purely defensive attitude and again the 38th Division attacked, apparently with a limited objective. Though rather closely engaged, the division was not so seriously engaged that it could not withdraw during the night of the 27th-28th.

By the 28th the retirement of the Ninth Army had progressed to the point where the delaying force, the 38th Division had considerable space to trade for time but still not enough to permit the division to effect the necessary delay merely by forcing the Russians to deploy for attack; they must use more time so we find them in a position prepared for a defense of some duration. We find the German division employing its artillery effectively to compel the Russians to use the maximum amount of time in preparing for the attack. The 38th Division appears to have been prepared to make a determined defense on this position so long as the 8th Cavalry Division remained to protect the east flank. When, however, the cavalry withdrew, the 38th Division also withdrew under cover of darkness to a new position. By now, 6:00 AM, 29th, the Ninth Army had gained sufficient space on its enemy that a show of resistance was all that was needed by the delaying force. This we see being carried out by the 38th Division and the 22d Division. The Russians were not ready to attack this formidable looking force without considerable preparation. Before they were ready to make their attack the 38th Division withdrew to the southwest, having secured the necessary delay.

4. CONCLUSION.—It is believed that all our doctrines of delaying action were complied with in this action. True the division took chances on becoming seriously engaged in the two attacks but in neither case was it actually so closely engaged that it could not extricate itself. In the defensive action of the 28th the division compelled the enemy to use much time and a considerable part of his force preparing for an attack. The artillery, particularly, was used effectively to accomplish this purpose. At all times the attitude of the 38th Division was such as to impress the enemy with the threat of serious opposition. While no details of the withdrawals are available it is obvious that these must have been made under practically perfect control.

# General Terrain Exercise No. 8

31 May, 1938


| | Paragraphs |
|---|---|
| SECTION I.—Situation and First Requirement | 1-3 |
| II.—Second Special Situation | 4-5 |
| III.—A Solution of Second Requirement | 6 |
| IV.—Discussion | 7-12 |


## SECTION I

### Situation and First Requirement


| | Paragraph |
|---|---|
| General situation | 1 |
| Special situation (Blue) | 2 |
| First requirement | 3 |


1. GENERAL SITUATION.—*a. Maps.*—Strategic Map, Leavenworth (1934), 1 inch = 4 miles, Leavenworth sheet. Special Map A, herewith. Special Map B to accompany Section III.

*b. Boundaries.*—Kansas (Blue) and Missouri (Red) have recently declared war.

*c. Main forces.*—Hostile main forces are concentrating as follows: Blue in the area of Topeka and west thereof; Red east of grid line 510. Red organization and Blue organization are similar.

2. SPECIAL SITUATION (BLUE). (See Special Map A.) —*a.* Blue war plans call for immediate invasion on the front: Leavenworth—St. Joseph and an initial advance to the Platte River in order to cover the crossing of the main Blue force, planned for 5 June.

*b. Mission of the 1st Division.*—The 1st Division, reinforced, Major General A commanding, using two ponton bridges and the vehicular bridge, crossed the Missouri at Atchison during the afternoon of 30 May. Its mission is to facilitate the advance of the remainder of the I Corps in the direction: Atchison—Plattsburg; and to hold the enemy east of the line: Iatan (739-H) — DeKalb — Kenmoor (224-H) until the arrival of the remainder of the I Corps, planned to begin at daybreak, 5 June.

*c. Events of 30 May.*—(1) On 30 May a Blue border guard battalion stationed at Troy (334-802) (Strategic Map) occupied St. Joseph, which was not garrisoned by Red troops. It established a line of defended road blocks along the Platte River covering the approaches to St. Joseph north of Garrettsburg (inclusive).

(2) Simultaneously the garrison of Fort Leavenworth, consisting of the equivalent strength of a regiment of infantry and a battalion of light field artillery, seized a bridgehead covering Leavenworth and Fort Leavenworth. This is a holding force not organized for offensive action.

(3) The 901st Observation Squadron operating from a landing field at Monrovia (310-771) (Strategic Map) reported intense enemy activity and circulation in the area: Richmond (440-741) — Liberty (398-737) — Excelsior Springs (416-748) (all Strategic Map) during 30 May.

(4) At 5:00 PM two enemy columns, each estimated to be a reinforced brigade, were marching north on the Liberty—Holt (405-762) road and U. S. Highway No. 69, with their heads about 12 miles southeast of Plattsburg (394-776) (Strategic Map).

*d. Situation at 5:00 AM, 31 May (see Special Map A).* —At 5:00 AM, 31 May, Major General A at the command post at road junction 612-J (near New Market), is aware that the following situation exists:

(1) *Own forces.*—The 1st Division is alerted in bivouac as shown, after a forced march, at 1:00 AM. The 1st Squadron 1st Cavalry and Reconnaissance Detachments Nos. 1 and 2, which preceded the division, are holding the crossings over the Platte River between Platte City (exclusive) and

SPECIAL MAP A
SITUATION AT 5:00 AM, 31 MAY
FOR STUDENTS' SOLUTION OF EE REQUIREMENT
THE COMMAND AND GENERAL STAFF SCHOOL
Fort Leavenworth, Kansas
1937 - 1938
To accompany SECTION I
GENERAL TERRAIN EXERCISE NO. 8
31 May, 1938
(Rev)
Tractors
4:45 AM 31 May
Armd C
Detached Road Bridges
Bridgehead
(Bivouac of 1 Inf protected by 90 sf Inf (Lt C))
2(-)
1(-)
1 at
3
90 sf
1 G
1 E

Garrettsburg (exclusive). The reconnaissance detachments are assembled, except small detachments which hold the bridges indicated. At 4:30 AM enemy scout cars were opposing our motorized reconnaissance elements at Farrelview (436-O) and southeast of Garrettsburg. Enemy cavalry patrols were in contact with our cavalry along the Platte River between Junction Bridge (742-J) and road junction 413-J. Major General A has just been informed by the I Corps that sufficient trucks from the Corps Quartermaster Service to move the essential combat elements of one infantry regiment would be made available at Atchison on two hours' notice, and that the Fort Leavenworth and St. Joseph forces passed at once to his command.

(2) *Enemy.*—From reports from the 901st Observation Squadron * * * —(a) At 4:45 AM an enemy force of all arms, estimated to be a division, was advancing west from the vicinity of Plattsburg.

(b) At 4:45 AM a force, estimated to be an infantry brigade with horse-drawn and tractor artillery, was marching northwest on the Liberty—Platte City road, with its head 4 miles east of Nashua.

(c) At 4:55 AM a truck column, estimated to be a brigade with reinforcing artillery, moving north from Liberty, turned west at Kearney.

3. FIRST REQUIREMENT.—The decision of Major General A at 5:00 AM, 31 May, for the employment of the 1st Division until reinforced by the remainder of the I Corps (omitting the Fort Leavenworth and St. Joseph detachments, which will remain on their present missions).

NOTE

Daylight begins at 4:00 AM; darkness at 8:35 PM.

SECTION II

**Second Special Situation**


| | Paragraph |
|---|---|
| A solution of first requirement | 4 |
| Second requirement | 5 |


4. A SOLUTION OF FIRST REQUIREMENT.—Decision of Major General A at 5:00 AM, 31 May: To delay the enemy in successive positions. Initial delaying position: west bank of Platte River between road junction 120-O and Agency. To effect maximum delay on that position; and hold the enemy east of the line: Iatan—DeKalb—Kenmoor until reinforced.

5. SECOND REQUIREMENT.—Show in *red* pencil on Special Map A:

*a.* General location of the first delaying position.

*b.* Dispositions of the 1st Division as ordered, to carry out the decision of Major General A at 5:00 AM, to include the general location of the following *only:*

Reconnaissance detachments.

Infantry brigades and boundary between brigades.

Field artillery regiments (or battalions if given separate missions), showing whether in direct or general support.

Division reserve (omitting engineer and chemical elements).

Cavalry squadron.

Corps quartermaster service trucks which will be available.

*c.* If Major General A's plan for the delaying action should include the occupation of any delaying position(s) between the Platte River and the Iatan—DeKalb—Kenmoor bridgehead, show on Special Map A, in *red* pencil, the approximate location of such position(s).

SECTION III

**A Solution of Second Requirement**


| | Paragraph |
|---|---|
| A solution of second requirement | 6 |


6. A SOLUTION OF SECOND REQUIREMENT.—See Special Map B, herewith.

SECTION IV

**Discussion**


| | Paragraph |
|---|---|
| Purpose | 7 |
| Mission | 8 |
| Situation at 5:00 AM, 31 May | 9 |
| Plans open to the 1st Division | 10 |
| Decision | 11 |
| Dispositions ordered | 12 |


7. PURPOSE.—The purpose of this general terrain exercise is to illustrate a delay in successive positions, by a reinforced division, of two hostile divisions, one of which has a motorized brigade.

8. MISSION.—The mission of the 1st Division is to facilitate the advance of the remainder of the I Corps in the direction: Atchison—Plattsburg; and hold the enemy east of the line: Iatan—DeKalb—Kenmoor until the arrival of the remainder of the I Corps, planned to begin at daybreak, 5 June.

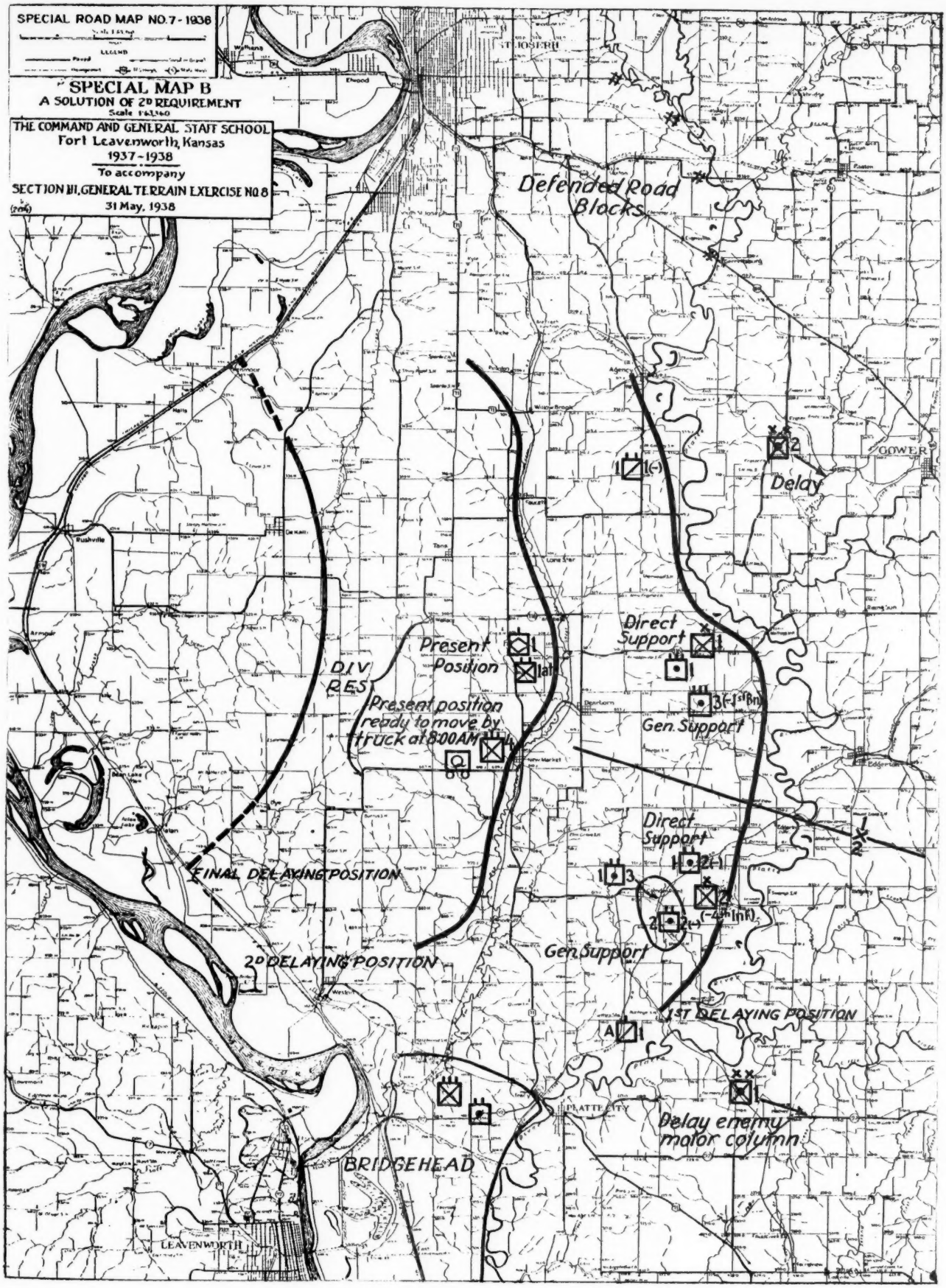
9. SITUATION AT 5:00 AM, 31 MAY.—*a.* At 5:00 AM, 31 May, the 1st Division is alerted in bivouac in the New Market—Dearborn—Campbell area. It completed a forced march at 1:00 AM and has had a four hour rest. The 1st Squadron 1st Cavalry and Reconnaissance Detachments Nos. 1 and 2 are holding the crossings of the Platte River between Platte City (exclusive) and Garrettsburg (exclusive).

*b.* The appearance of the Plattsburg Red division was probably correctly estimated from information furnished by the air service during the afternoon of 30 May. The motorized column which had its head at Kearney at daybreak; and the reinforced brigade advancing west on Nashua at daybreak, were first reported at that time.

*c.* The advance guards of the Plattsburg division are 9 miles or more east of the Platte River by most direct routes of approach. If unopposed, they can reach the line of the Platte River by about 8:30 AM.

*d.* The column marching on Nashua is about 17 miles east of Platte City. If unopposed, it can, by a forced march, reach Platte City by noon.

*e.* The motorized column, if unopposed, can reach the Platte River in the vicinity of Platte City shortly before 6:00 AM. It can turn north on U.S. Highway No. 169 or any number of secondary roads and become a threat to the north flank.


SPECIAL ROAD MAP NO. 7 - 1938
SPECIAL MAP B
A SOLUTION OF 2D REQUIREMENT
Scale 1:63,360
THE COMMAND AND GENERAL STAFF SCHOOL
Fort Leavenworth, Kansas
1937 - 1938
To accompany
SECTION III, GENERAL TERRAIN EXERCISE NO 8
31 May, 1938
Defended Road Blocks
Delay
Present Position
DIV RES
Present position ready to move by truck at 8:00 AM
Direct Support
Gen. Support
FINAL DELAYING POSITION
2D DELAYING POSITION
1ST DELAYING POSITION
Delay enemy motor column
BRIDGEHEAD
LEAVENWORTH
PLATTE CITY
GOWER

10. PLANS OPEN TO THE 1ST DIVISION.—*a.* In order to accomplish its entire mission, the 1st Division must advance as far as possible in the direction of Plattsburg. It must at all cost hold the enemy east of the line: Iatan—DeKalb—Kenmoor and secure a bridgehead for the remainder of the I Corps. The enemy situation at 5:00 AM renders a further advance impracticable.

*b.* The limit of any retrograde movement which the division should consider is the line: Iatan—DeKalb—Kenmoor, which must be held until the remainder of the I Corps can reinforce it.

*c.* If the division attempts to defend the line of the Platte River until it can be reinforced, it must hold that position unaided until sometime during the morning of 5 June, if reinforcements are sent by motor; or throughout 5 June if they arrive by marching. The Blue force holding the bridgehead covering Leavenworth and Fort Leavenworth furnishes some security on the south flank. If not attacked in force, its artillery can assist in the defense of the south flank. The border guard battalion which seized St. Joseph can only furnish relatively weak resistance. Its road blocks should stop mechanized reconnaissance and give the enemy the impression that the town is held. With the advantage of a motorized brigade and a relative strength of two to one, the enemy should be able to overextend the 1st Division and drive home a successful attack on the Platte River position before reinforcements can arrive.

*d.* If the 1st Division retires at once to the Iatan—DeKalb — Kenmoor position, the enemy should follow up promptly and be ready to develop the position and launch an attack within 24 hours, or less, after the division occupies it. While this position is strong, its center has favorable avenues of approach and, if the division is defeated on it, the bridgehead for the I Corps is lost.

11. DECISION.—The 1st Division should delay the enemy in successive positions in order to gain as much time and retain as much terrain as possible. The first delaying position should be the west bank of the Platte River (see Special Map B). This is a serious obstacle. Maximum delay should be effected on this position. It cannot be decided at this time how long the position must be held. Between the line of the Platte River and the Iatan—DeKalb—Kenmoor position, the west bank of Bee Creek has strong defensive possibilities. This is far enough in rear of the first delaying position to force the enemy to displace his artillery before he can attack it. This should be selected as a second delaying position. The final position to be held is indicated on Special Map B. It takes advantage of the best defensive terrain in front of the Iatan—DeKalb—Kenmoor line without undue over-extension. Its flank extensions rest on the bluffs overlooking the Missouri flats.

12. DISPOSITIONS ORDERED.—*a. Reconnaissance detachments.*—The 1st Division is alerted and should be ready to move without delay. The division commander is concerned immediately with the delay of the motorized brigade at Kearney. Reconnaissance Detachment No. 1 is assembled and can move promptly. It should be given the mission of delaying the motorized column. The presence of Blue armored cars in the vicinity of Ferrelview should assist in forcing the Red motor column to detruck or halt until the situation is cleared up. Reconnaissance Detachment No. 2 should be given the mission of delaying any enemy forces which attempt to approach the line of the Platte River north of Castile Creek.

*b. Infantry brigades.*—The extent of the front on which delaying action is to be employed indicates the use of brigades abreast. Advanced elements of the 1st Brigade are from three to five miles west of the Platte River. If the brigade is moved at once to occupy the first delaying position, between Edgerton Junction and road junction 413-J, it should be able to begin organizing parts of the position before the Plattsburg division reaches the Platte River. Advanced elements of the 2d Brigade are approximately six miles from the center of the position they should occupy. They must march nine miles or more by road to reach their positions. The necessity for early delay of the hostile motor column is therefore evident.

*c. Boundary between brigades.*—At 5:00 AM the enemy motor column is moving in the direction of the south flank. The 2d Brigade is nearest that flank and elements of that brigade should be moved at once to meet the threat. The 1st Brigade is faced with a force of equal mobility, but of twice its strength, which can begin to reach the Platte River about 8:30 AM. With the Platte River as an obstacle, it should be able to extend to meet the enemy attack on a wide front. The 2d Brigade cannot expect to meet the mobility of the enemy motorized brigade. It can only block the crossings of the Platte and hold the key points of the terrain. Should the enemy motor column turn north before reaching the Platte River, and become a threat on that flank, it must be met by a force of equal mobility. Should this occur, the 2d Brigade will probably not be attacked in force until the afternoon. A large reserve should therefore be held out, ready to move as soon as trucks are available. In view of the strong probability of an attack against the 1st Brigade this morning, and the uncertainty of developments on the south flank, a reserve of one regiment should be taken from the 2d Brigade, and the brigade assigned a relatively short front. The enemy's capabilities of extending the attack to the north are almost unrestricted because of the weak Blue force at St. Joseph. For this reason, the bulk of the cavalry should be assembled on that flank after its relief. The presence of a regular force with artillery on the south flank adds to its security. A boundary between brigades extending from crossroads 751-J to Edgerton Junction and thence to the north exit of New Market, will place the 1st Brigade in position to meet the Plattsburg Reds and the 2d Brigade to meet the threat on the south flank. The present location of brigades makes this a desirable solution.

*d. Field artillery regiments.*—The 1st Field Artillery should be placed in direct support of the 1st Brigade and the 3d Field Artillery (less one battalion) in general support, emplaced in rear of the 1st Brigade. The artillery should be well forward initially in order to take full advantage of its range in delaying the Plattsburg Reds. The echelonment of the artillery will then be progressive until it has proper depth to give support to the delaying action on the Platte River position, which may amount to a passive defense. The 2d Field Artillery and one battalion of the 3d Field Artillery should be placed initially in rear of the 2d Brigade. In view of the uncertainty of the direction which the enemy

motor column will take, a suitable organization of the artillery on the south flank would be the 2d Field Artillery, less one battalion, in direct support of the 2d Brigade and a groupment of one battalion of the 2d Field Artillery and one battalion of the 3d Field Artillery in general support. This will facilitate the displacement of these battalions should it later become necessary. The necessity for early delay of the enemy on the front of both brigades makes it inadvisable to hold any artillery in readiness.

*e. Division reserves.*—(1) The enemy capabilities of attacking on a wide front necessitate a reserve of at least a regiment of infantry, centrally located. Sufficient trucks from the I Corps Quartermaster Service will be available at Atchison on two hours' notice. The trucks should be brought forward and held under available cover west of the New Market—Faucett road, somewhere near the present location of the regiment which will be used as division reserve. If the trucks are left in Atchison, an hour will be lost in getting them forward to move the regiment to any threatened point.

(2) *1st Tank Company.*—The 1st Tank Company should be held in division reserve in its present location until the situation develops further. Its employment to delay the enemy east of the Platte River is not justified at this time.

(3) *1st Antitank Battalion.*—The 1st Antitank Battalion should be held in division reserve, centrally located at this time, until the direction of movement of the enemy motor column is determined. From the location selected, it can move rapidly on good roads to either flank. The Platte River is a serious obstacle to a tank attack and it is doubtful whether the enemy would attempt their employment in the early stages of the action. The most valuable use of the antitank battalion at this time is as a highly mobile reserve.

*f. 1st Squadron 1st Cavalry.*—The bridgehead on the south flank should restrict enemy maneuver to some extent on that flank. The north flank is only weakly secured by the defended road blocks of the border guard battalion which captured St. Joseph. The bulk of the 1st Squadron 1st Cavalry will be required on the north flank in order to meet and delay enemy maneuver on that flank. When relieved by the infantry, the squadron (less one-half troop) should be assembled on the north flank and one-half troop on the south flank, to meet the situation existing at that time.

**"When you are occupying a position which the enemy threatens to surround, collect all your forces immediately, and menace him with an offensive movement. By this maneuver you will prevent him from detaching and annoying your flanks, in case you should judge it necessary to retire."**

**Napoleon's Maxims of War—XXIII**

This was the maneuver successfully practiced by Desaix in 1798, near Radstadt, and in the same campaign by Moreau at Biberach and at Schliengen against the Archduke Charles.

# Directory of Periodicals

Included in this directory are only those periodicals from which articles have been selected.
See also, "List of Periodicals Indexed and Key to Abbreviations."

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# Catalog of Selected Periodical Articles

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### ARMY MEDICAL BULLETIN

**January 1939**

OBSERVATIONS ON THE MEDICAL DEPARTMENT OF THE JAPANESE NORTH CHINA EXPEDITIONARY FORCE. Lieut.Colonel Fox

THE EFFECT OF THE WORLD STRUGGLE FOR RAW MATERIALS ON NATIONAL DEFENSE. Lieut.Colonel Rogers

### ARMY ORDNANCE

**March-April 1939**

THE PRESIDENT'S DEFENSE MESSAGE. CRITICAL ITEMS OF ORDNANCE — LONG NEEDED — TO BE PROCURED

THE AIR FORCE SPREADS ITS WINGS. THE PRESSING PROBLEMS OF DEVELOPMENT AND PRODUCTION. Major General Arnold

ARTILLERY AMMUNITION PRODUCTION. AN ORDNANCE PROBLEM AND THE FRANKFORD ARSENAL ANSWER. Lieut.Colonel Campbell, Jr.

"THE MODERN ARMY." AN ANALYSIS OF GENERAL MAURIN'S STUDY OF THE FRENCH FORCES. Lieut.Colonel Armstrong

IN DEFENSE OF ANTIAIRCRAFT. GUNS, NOT AIRPLANES, SAVED PARIS FROM THE BOMBERS IN 1918. Major Phillips

**May-June 1939**

FUNDAMENTALS OF PREPAREDNESS. SOME FACTS AND FIGURES OF THE NEW ORDNANCE PROGRAM. Major General Wesson

PROVING GROUND IN SPAIN. ARMAMENT TRENDS AS REVEALED BY THE CIVIL WAR. Brigadier General Reilly

THE 75-MM GUN. THE PAST AND FUTURE OF A FAMOUS ARTILLERY WEAPON. Captain Conner

### ARMY QUARTERLY (Great Britain)

**April 1939**

GERMANY'S ECONOMIC MOBILIZATION. Dr. Sternberg

"THE OTHER SIDE OF THE HILL." No. XVII. BATTLE OF ARRAS: 9TH OF APRIL, 1917

POLICY AND COMMAND IN THE AMERICAN CIVIL WAR, 1864-1865. Major Sheppard

SCHLIEFFEN'S TACTICAL-STRATEGIC PROBLEMS

### BULLETIN BELGE DES SCIENCES MILITAIRES (Belgium)

BY LIEUTENANT COLONEL E.M. BENITEZ, Coast Artillery Corps

**October 1938**

THE WAR OF 1914-1918 ON THE RUSSIAN FRONT. WAR EXPERIENCES OF AN ARTILLERY OFFICER OF THE IMPERIAL RUSSIAN ARMY.

[La guerre 1914-1918 sur le front russe. Souvenirs de campagne d'un officier de l'armée impériale russe.] (I) Lieutenant Jusret

Extracts from the field diary of Captain Miroslaw Koukhareritch, an artillery officer of the Imperial Russian Army during the World War. This

officer fought on three different fronts under various conditions. He was artillery officer, served in the General Staff and was a member of the Russian mission with the Rumanian army. He holds several war decorations for bravery.

The types composing the old Russian army are described. The Russian officer was affiliated with the privileged group to which only certain classes could belong. The nobility entered the Imperial Guard and the cavalry, while the youth of the bourgeoisie went to the ordinary regiments. The prevailing atmosphere was not conducive to improvement in the military profession and only during maneuvers or field exercises did a young officer have any opportunity to take an interest in military matters.

The number of vacancies in service schools was limited and were given only to those who had influential friends. Such was the condition in the infantry. It was different in the artillery and engineers where more efforts were made to learn the military profession.

The Russian soldier was ignorant, but anxious to learn; disciplined, obedient by instinct, brave, fatalist even to the supreme sacrifice. He had no particular hatred for either Austrians or Germans, because he was ignorant of State and political reasons. He fought because he had received the order to fight, and he fought bravely.

Statistics show that Russia mobilized 15,070,000 men of which 1,700,000 were killed, which was twice the peace-time army; to this number should be added the wounded, mutilated and sick, which shows that the army cadres were completely destroyed during the war.

Captain Koukhareritch was called to the colors on 2 August 1914. He participated in the operations against Lemberg and in the Carpathians.

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PHYSICAL TRAINING IN AVIATION.
[L'éducation physique à l'Aviation.] Lieutenant Evrard

Paradoxically as it may seem, flying is a sedentary occupation. Piloting a plane and carrying out routine missions do not require exertion nor prolonged muscular movements.

The author discusses the kinds of strain which the aviator undergoes. In regard to respiration, for example, the consumption of oxygen increases with the altitude. Similarly the pulse which on the ground is 75 pulsations per minute, rises to 115 at 9,800 feet, 140 at 16,000 feet and 160 at 24,000 feet. The nervous system is under strain while flying.

These conditions make it advisable to prescribe a course of physical training to strengthen the system. A programme of physical exercises to keep fit is recommended.

## November 1938

THE WAR OF 1914-1918 ON THE RUSSIAN FRONT. WAR EXPERIENCES OF AN ARTILLERY OFFICER OF THE IMPERIAL RUSSIAN ARMY.
[La guerre 1914-1918 sur le front russe. Souvenirs de campagne d'un officier de l'armée impériale russe.] (II) Lieutenant Jusret

This is the second instalment of the war experiences of this Russian artillery officer in which he describes the Russian-Austrian engagements south of Lemberg, 20-26 August, 1914.

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THE REGIMENTAL RECONNAISSANCE PLATOON.
[Le peloton d'éclaireurs régimentaires.] Lieutenant Moyson

The regimental reconnaissance platoon is now included in the French, German and Italian infantry units. It has been recently adopted in Belgium, and is a unit consisting of cyclists and motorcyclists, whose mission is to work in close cooperation with the infantry exclusively.

Lieutenant Moyson presents for discussion a platoon organized as follows:

ORGANIZATION:

Platoon commander in side car
Six men, technical personnel: two in side cars, three in a light truck and a mechanic in motorcycle.
A group of eight motorcyclists
Two cyclist groups of seventeen men

ARMAMENT: Two combinations:

1 { 3 automatic rifles, Mod. 30
  { 3 light machine guns, Mod. 34
  { 42 rifles, Mod. 36

2 { 6 light machine guns
  { 42 rifles, Mod. 36.

With the excellent road net in Belgium, it will be possible to traverse the country without difficulty. In wooded sections or difficult terrain, the bicycles are carried over and used as soon as circumstances permit.

The functions of this platoon in peace and war are discussed in detail. Its tactical employment is fully illustrated by sketches showing various situations, on the march, attack, defense and delaying action.

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COMMENTS ON PURSUIT AVIATION.
[Commentaires sur l'aviation de chasse.] Major Coppens de Houthulst

Extracts of a conference given to the Belgian Air Service. Moral superiority is of great value, because it is the bravery of the pilot that makes the armament formidable.

FORMATION AND ORGANIZATION OF THE MEDICAL OFFICERS IN THE BELGIAN ARMY.
[Le recrutement et la formation des officiers du Service de Santé dans les armées.] Major General Leman

An account of organization of the medical officers of the Belgian army, including admission requirements, schools and other matters.

## December 1938

THE WAR OF 1914-1918 ON THE RUSSIAN FRONT. WAR EXPERIENCES OF AN ARTILLERY OFFICER OF THE IMPERIAL RUSSIAN ARMY.
[La guerre 1914-1918 sur le front russe. Souvenirs de campagne d'un officier de l'armée impériale russe.] (III) Lieutenant Jusret

This instalment covers the siege of Przemysl, September 1914. At this time the Austro-Hungarian army was in full retreat, leaving behind thousands of prisoners, guns, rifles and other war material. Lemberg, capital of Galicia, had fallen into Russian hands.

The fortress of Przemysl, commanded by General Kousmaneck, surrendered with an army of 100,000 men and 12,000 officers. General Solivanoff, the Russian commander, captured an enormous amount of war materials and was now in position to cut off the lines of communication of the Austrian armies already engaged in the Carpathians.

At Novo-Sandetz, however, the Russian armies, attacked in front by von Mackensen and in flank by Gorlovitz while a strong Austro-Hungarian army was advancing to cut off the lines of communication in rear, were compelled to withdraw from the Carpathians, May 1915.

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RECONNAISSANCE IN THE INFANTRY.
[Le fonctionnement de l'observation à l'infanterie.] Lieutenants Hourman and Joachim

Extracts from a study on reconnaissance and observation in the infantry, illustrated by concrete cases. The discussion covers defensive and offensive action, approach march, flank and rear guards and special situations.

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TANK'S PREDECESSORS.
[Les Précurseurs des Chars d'assaut.] Captain de Grave

This interesting article is illustrated with several sketches showing the type of tanks from the fifteenth century to the World War.

Xenophon tells us of the tanks used by the great King Ataxerxes II and Cyrus his brother and rival, whose arms clashed on the plains of Cunaxa, to decide the possession of Babylon in 401 B.C. Antiochus of Syria and Mithridate used them against the Romans.

The Greeks perfected tanks and siege devices. However, the constructive ability of these machines during the reign of Alexander was carried too far and they lost in mobility what they gained in power.

A letter written by Voltaire to Catherine of Russia, read in part:

"Besides, it has been said in a book that never lies, that Solomon had 12,000 war cars in a country where there were only jackasses before his reign."

After discussing the tanks of the Primitive ages, and Middle ages, the author credits Colonel Estienne of the French army as the first to develop the heavy armored tank of 1915-16. The British inventors were working out their ideas independently at the same time and it was not until June 1916 that the French and British governments exchanged their plans.

The French began the construction of the "Schneider" tank in February 1916 and the Saint-Chamond in April of the same year. Both were 15-ton tanks armed with one 75-mm gun and from two to four machine guns. The first Renault (caterpillar) tank was manufactured 30 December 1916.

In 1916 the British were trying out a 24-ton tank armed with one gun and from four to six machine guns, with a crew of 15 men.

In the World War tanks were used for the first time by the British in the battle of the Somme, September 1916. The first French attack with tanks was Craonne on 16 April 1917, in which both the Schneider and the Saint Chamond tanks were used. On 23 October 1917, another tank attack was launched at Malmaison with excellent results.

The Germans used tanks for the first time in the St. Quentin offensive, 21 March 1918. The German "Elfriede" tank weighed 45 tons, had two Daimler-Mercedes motors of 150 horse-power each; armament, one 58-mm gun and six machine guns.

General v.Eimannsberger in his book "The War of Tanks," published in 1935, criticizes the German command severely for having failed to give recognition to this new arm and thus permitted its infantry to suffer many casualties from these mechanical monsters.

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THE ORIGIN OF THE INTER-ALLIED MOTOR TRANSPORT POOL DURING THE WORLD WAR, 1914-1918.
[Les origines du groupement automobile interallie pendant la Campagne 1914-1918.] Captain Hartman

By the middle of August 1918, the unity of command had become a fact, and in order to meet the increasing demands for motor transportation that the continuous series of offensive blows planned by Marshal Foch required, it became necessary to organize a huge war reserve of motor transport.

A motor transport pool of 24,000 vehicles was organized, of which the French and American armies contributed 8,000 vehicles each; the British 7,000, and the Belgians and Italians the other 1,000. The above figures

were estimated to be sufficient to transport and supply a force of 40 divisions operating at a distance of 40 to 45 miles from railheads.

The author states that according to very reliable, although non-official information, the American command insisted upon Belgian participation in the organization of the Inter-Allied Reserve, in spite of the opposition from the British command.

### CANADIAN DEFENCE QUARTERLY (Canada)

**April 1939**

CANADA'S COMMONWEALTH AND FOREIGN POLICIES. The Right Honorable W.L. Mackenzie King

LEADERS WIN WHERE COMMANDERS LOSE. Major Sandusky, U.S. Infantry

STATEMENT ON BRITISH DEFENCE

THE FOREIGN POLICY OF THE UNITED STATES. Henry L. Stimpson

### CAVALRY JOURNAL (Great Britain)

**January 1939**

FRENCH VIEWS ON MODERN CAVALRY. (Part II) Major Sheppard

RAIDS AND COUNTER RAIDS: AS SEEN FROM BOTH SIDES. (Part II) Major General Pitman

**April 1939**

SOME MORE THOUGHTS ON MECHANISATION. By "Vesnulret"

### CHEMICAL WARFARE BULLETIN

**April 1939**

THE CHEMIST AS DEFENDER OF HIS FATHERLAND. Prof. Bogert, Columbia University

THE INDUSTRIAL MOBILIZATION PLAN. Major Fisher

THE NEED FOR SMOKE IN LANDING OPERATIONS. Lieutenant Sauer

### COAST ARTILLERY JOURNAL

**March-April 1939**

THE CAMPAIGN OF SURPRISE: BONAPARTE IN ITALY. Pratt

FIRE AT MANEUVERING AIRCRAFT: A PRIZE ESSAY. Captain Chester

STRATEGY IN THE MEDITERRANEAN. Major General Rowan-Robinson, British Army

THE ROLE OF AA ARTILLERY. General Culmann, French Army

### FIELD ARTILLERY JOURNAL

**March-April 1939**

THE CAVALRY — ARTILLERY TEAM. Lieutenant Greco

2000 MILES THROUGH THE ROCKIES. Captain Rogers

ITALIAN GUNNERY METHODS. Captain Connor

### FIGHTING FORCES (Great Britain)

**April 1939**

THE IMPERIAL DEFENCE LEAGUE. By "Tocsin"

A.A. BARRAGES

SURPRISE IN DEFENCE. Captain Asplin

### INFANTRY JOURNAL

**March-April 1939**

THE TACTICS OF THE NEW INFANTRY REGIMENT. Major General Lynch

STRATEGY IN THE MEDITERRANEAN. Major General Rowan-Robinson

CLIMAX IN CATALONIA. Captain W.G. Johnson

AMMUNITION SUPPLY IN THE NEW REGIMENT. Lieut.Colonel Tindall

THE CAMPAIGN OF SURPRISE: BONAPARTE IN ITALY. Part II. Pratt

### THE JOURNAL OF THE AMERICAN MILITARY INSTITUTE

**(Formerly, "American Military History Foundation")**

**Spring, 1939**

MILITARY CONTRIBUTIONS DURING THE EIGHTEENTH CENTURY. Colonel Wright

BATTLE ON THE VISTULA. Clarence A. Manning

JACKSON'S FREDERICKSBURG TACTICS. Branch Spalding

### JOURNAL OF THE ROYAL ARMY MEDICAL CORPS

(Great Britain)

**April 1939**

AN ACCOUNT OF THE ANNUAL TRAINING OF A CAVALRY FIELD AMBULANCE (1938). Lieut.Colonel Stewart

A SUGGESTION FOR MODIFICATION OF THE ADVANCED DRESSING STATION. Captain Clark

### JOURNAL OF THE ROYAL ARTILLERY (Great Britain)

**April 1939**

THE UNITED STATES IN WORLD AFFAIRS. A LECTURE DELIVERED AT THE ROYAL ARTILLERY INSTITUTION, 23 NOVEMBER 1938. By Sir Frederick Whyte

ANTI-TANK 1938. Colonel Lambert

EMPLOYMENT OF ANTI-AIRCRAFT UNITS IN THE FORWARD AREA. Brigadier Pargiter

ANTI-TANK ARTILLERY. SOME REFLECTIONS ON A NEW ROLE. Major Calver

### JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION

(Great Britain)

**February 1939**

THE IMPORTANCE OF STUDYING NAVAL HISTORY. Admiral Sir William M. James

THE INFLUENCE OF AIRCRAFT ON LAND OPERATIONS. Major-General Collins

FIRE SUPPORT FROM THE AIR. Major Jebens

THE SPANISH CIVIL WAR. Wing-Commander James

### JOURNAL OF THE UNITED SERVICE INSTITUTION OF INDIA

(Great Britain — India)

**January 1939**

ITALO-ABYSSINIAN WAR. Lieut.Colonel Arnold

"DISCUSS THE DICTUM THAT THE SIZE OF MODERN ARMIES HAS RENDERED STRATEGY WHOLLY SUBORDINATE TO TACTICS." Lieut.Colonel Dunford (Gold Medal Prize Essay, 1938)

### DIE KRAFTFAHRKAMPFTRUPPE (Germany)

BY CAPTAIN H.N. HARTNESS, Infantry

**October 1938**

MOTORIZATION OF THE ARMS IN FOREIGN ARMIES. ORGANIZATION, EMPLOYMENT AND EQUIPMENT.

[Die Motorisierung der Waffen fremder Heere. Neues über Gliederung, Verwendung und Ausrüstung.]

Russian principles for the employment of mechanized and motorized units. (Taken from "Schweizerische Monatschrift für Offiziere aller Waffen") — Mechanized units consist of tanks, self-propelled artillery and infantry in trucks.

Division reconnaissance battalions consist of cavalry, armored vehicles and motorized infantry.

Moto-mechanized units consist of armored vehicles and motorized infantry; these units belong to the larger cavalry units.

In general, mechanized units will be given independent missions, which these units, because of their speed, fire and shock action, are capable of executing. The basic principle of employment is a tank attack supported by artillery. The assembly position shall be protected, and the attack supported by air units.

In addition to missions of immediate and close support of infantry, tank units will be given missions of driving deep into the hostile position in order to destroy reserves, artillery, command posts and columns and to cut off lines of retreat. Tanks combat machine guns while the artillery combats antitank guns.

Tanks shall attack in mass.

In the defense tanks will execute counterattacks.

Moto-mechanized units, supported by artillery, execute distant reconnaissance. Reconnaissance for the division is performed by the division reconnaissance battalions. For the distant division reconnaissance, the battalion will precede the division by 16 to 19 miles and it in turn will push forward patrols consisting of two or three reconnaissance cars and motorized infantry. Furthermore, mobile observation posts will be sent 2 to 3 miles beyond the main body of the reconnaissance battalion. The observation posts, transported in trucks, will each be under an officer, and will be protected by the cavalry patrols which have preceded them.

For close-in reconnaissance the reconnaissance battalion should be reinforced with artillery and perhaps infantry. Combat missions, such as the seizure of important terrain features, may be assigned. As contact is gained the division commander may employ, in addition to the reconnaissance battalion, an infantry battalion, reinforced by two artillery battalions and at least a tank battalion to thicken the reconnaissance means.

Mechanized units reconnoiter with their security elements or reconnaissance units.

Mechanized brigades ordinarily send forward a reconnaissance company, often reinforced by special armored vehicles or motorized infantry detachments. A reconnaissance company with artillery, one or two platoons of tanks and motorcyclists can precede the brigade by 16 to 22 miles. Such a reconnaissance unit can advance at the rate of 6 to 9 miles per hour. As contact with the enemy is gained it pushes on, supported by artillery and tanks.

Under antitank defense are understood:

(1) Good communications from the tank warning service.

(2) Protection by antitank guns on the march, during rests and on the battlefield.

(3) Countermeasures by own tanks.

(4) Protective measures taken by the troops in utilizing the terrain and laying obstacles.

When warning is given of a tank attack while the force is marching, the infantry, cavalry and vehicles seek protection in covered terrain (woods, villages, thickets, ravines). Machine guns and sharpshooters go into camouflaged positions from which they can open fire on the tanks at a range of 200 yards. Mortars and artillery (other than long-range artillery) go into position. After the tank attack has been repelled the march is resumed.

During combat it is necessary to maintain continuous observation and antitank defense measures against tank attacks. It is a fundamental principle that the artillery be safe against tank attack.

In meeting engagements and during the attack, strong antitank defense means must follow the infantry closely; moreover, defense must be provided on the flanks and for the reserves. In addition to utilizing natural obstacles and constructing artificial obstacles in the defense, a careful plan must be prepared for the employment of suitable artillery and the antitank guns against tank attacks. In defense, it shall be the mission of the reconnaissance battalion to entice the tanks into unfavorable terrain or against the strongest tank defenses.

By the employment of tanks together with motorized infantry and by the rapid advance of mechanized units against the hostile line of retreat, the attack shall penetrate or envelop the hostile lines. Against retreating hostile columns, a combination of air units, cavalry and mechanized units is especially effective.

The tank battalion of the division has the mission of closely supporting the infantry. Additional tanks allotted the division from higher headquarters may be assigned close support missions or may be assigned more distant missions and objectives. When assigned these latter missions, they shall break into and through the hostile front.

As a rule, in the attack, the tanks organically a part of the division, will be attached in units of companies or platoons to the infantry. In the defense, however, the division tank battalion will be held together as a unit ready to counterattack. Employment of tanks in echelon is the rule.

Tanks employed by the higher commander to break through should be reinforced by artillery and air units. In difficult terrain it may be necessary to have the infantry precede the tanks.

As a rule each infantry battalion in the forward line shall be supported by an artillery battalion and a tank company. Should tanks be lacking, the strength of artillery support must be doubled. Infantry mortars and the regimental artillery shall support the tanks.

In the breakthrough tanks shall not linger in the area where they break in; they must drive deeply into and through the hostile position.

The rate of march of motorized units is 9 to 16 miles per hour; that of mechanized units 6 to 12 miles per hour.

Vehicles necessary to transport an infantry battalion, 100 to 120 1½-ton trucks; an infantry regiment, 700 1½-ton trucks; a field artillery battalion, 100 to 120 1½-ton trucks; a medium artillery battalion, 180 3-ton trucks.

The loading time for an infantry battalion is 40 to 60 minutes; for an artillery battalion, 60 to 90 minutes.

Tactical units will be transported as complete units. Distance between vehicles: 20 to 50 yards; between battalions: 1½ to 3 miles.

Every two hours halts of 10 to 15 minutes shall be made. On marches in excess of 75 miles, a rest of 2 to 2½ hours shall be made during the march, at which time troops shall be unloaded and fed.

Time required to unload: infantry battalion, 15 to 20 minutes; artillery battalion, 30 to 40 minutes. At night about 15 additional minutes are required.

The loading and unloading areas must be secured and camouflaged. Pursuit planes should be employed to protect them, as well as the march. Antiaircraft protection by antiaircraft batteries must be provided. Antitank weapons should be distributed in the march columns. Upon receipt of warning orders they go into position. When mechanized elements are included in the march columns they also are employed against hostile tank attacks.

Organization of the English mobile division.—According to "The United Services Review," a mobile division has been organized. This division consists of two mechanized infantry battalions as division troops. Each cavalry brigade consists of three light tank regiments. Obviously, this is a strong tank division.

The rapid division in Bulgaria.—According to press reports the following details of the rapid division are made known: The mass of the vehicles consist of the "Steyr 40 D." Both tank companies are equipped with the light "Fiat-Ansaldo M33" tank. In the division there are organically a motorcycle battalion and a motorized artillery regiment (14.9 Ansaldo Howitzers M14).

**November 1938**

RUSSIAN PRINCIPLES FOR THE EMPLOYMENT OF TANKS AND MOTORIZED UNITS AND THE DEFENSE AGAINST THESE UNITS.
[Russische Grundsätze über den Einsatz von Panzer- und motorisierten Verbänden und der Abwehr dagegen.] (Part I)
(See digest of Part I, in March 1939 issue of Quarterly, page 73.)

**December 1938**

RUSSIAN PRINCIPLES FOR THE EMPLOYMENT OF TANKS AND MOTORIZED UNITS AND THE DEFENSE AGAINST THESE UNITS.
[Russische Grundsätze über den Einsatz von Panzer- und motorisierten Verbänden und der Abwehr dagegen.] (Part II)
(See digest, page 50)

## KRASNAYA ZVYEZDA (Russia)

(CENTRAL ORGAN OF THE COMMISSARIAT OF DEFENSE OF THE U.S.S.R.)

BY LIEUTENANT JOSEPH DASHER, Military Intelligence-Reserve

**27 January 1939**

INFANTRY IN HAND-TO-HAND COMBAT.
[Blizhniy Boy Pekhoty.] Major Kriventsov

The article deals with problems of hand-to-hand combat under winter conditions. The men are on skis, which limit body movement so essential in fighting at close quarters. In deep snow the use of tanks is rendered impossible, causing a further handicap. The author recommends special training for combat under such conditions. Rapid movement on skis with or without the use of gas masks, crawling with skis on, silent and camouflaged approach to the enemy, passing over such barriers on skis as ditches, pits, etc., cutting of barbed wire at low temperatures, throwing of hand grenades while in motion, the use of the bayonet and rifle butt, all these and other problems of hand-to-hand fighting while on skis are discussed.

**28 January 1939**

PURSUIT PLANES IN COMBAT WITH LAND FORCES.
[Bor'ba Istrebiteley s Nazemnymi Voyskami.] Captain Surinov and Lieutenant Fayzulin

The effectiveness of this form of combat has been demonstrated at Guadalajara in Spain, and during the Japan-Soviet incident at Lake Khasan. Method of attacking different objects on the ground should be adjusted to the nature of the target, because of the difference in the formation and tactics of units of the different arms. While it is true that infantry in column formations, or when collected at some point, is vulnerable to an air attack, it should not be forgotten that antiaircraft precautions probably will have been taken, precluding the possibility of an unexpected aerial attack. Motorized infantry and auto-train columns are quite vulnerable, being tied to the road. Because of the mobility of motorized columns, the air command must be careful to attack before unloading operations take place.

Cavalry is more vulnerable than infantry to aerial attacks, due to difficulty of concealing its movement (dust, etc.), but it must be borne in mind that cavalry will disperse faster than infantry. Because of this it is essential to select such a place for execution of the aerial attack, where cavalry cannot disperse easily due to topographical difficulties. It is best to attack cavalry by individual power dives at an angle of 45° to 50°, to an altitude of 300 to 400 yards. Separate ships, or groups of ships, must be designated for combat against antiaircraft machine guns and artillery.

Artillery columns also are vulnerable to aerial attacks, being tied to the road even more than infantry or tanks, and being limited in possibilities of concealing or dispersing in case of an attack.

Artillery in firing position should be attacked from the rear or the flank, as in such a case the guns must be turned at 90°, or even at 180°, in order to repel the attack.

**29 January 1939**

TRAINING OF THE STAFFS OF UNITS.
[Podgotovka Shtabov Chastey.] Colonel Zamyetin

A review of the recently published textbook by P.P. Vechnyi, "Methods of Training of the Regimental and Battalion Staffs."

**1 February 1939**

HOW WE TRAIN SNIPERS.
[Kak my obuchayem Snayperov.] Major Yevdokimov

The article has a certain professional value, as it shows interesting methods in the training of snipers, as employed by the Soviet Army.

**3 February 1939**

SIMPLEST FORMS OF FIELD FORTIFICATIONS.
[Prostyeyshiye Formy Polyevoy Fortifikatsii.] A. Golovanov

Spanish war experience demonstrates that all arms should be instructed in methods of building fortified positions, so that no time may be lost during combat in waiting for the engineering units to do this work. Frequently this must be done at night, under most difficult conditions. As the Spanish Loyalists have learned, trenches should give protection not only from rifle, machine-gun and artillery fire, but also from air bombs. As a rule, the Loyalists dig a narrow, deep trench, 150-180 cm. deep, and not more than 90-100 cm. wide. Individual shelters for every man are erected in the trench. The trench should have many breaks, and these should be short and sharp. Loyalist riflemen carry 4 to 5 sacks, which, when filled with earth, afford good protection. This method is recommended by the author for further study and development.

**4 February 1939**

EXPERIENCE IN FIELD STAFF TRAINING.
[Opit Shtabnykh Ucheniy v Pole.] Major Katsnelson

While the information as given by the author (Chief of Staff of a group of army units) is quite fragmentary, it serves, nevertheless to show that intensive staff training is being pursued in the Soviet Army. Special stress is laid on the development of high degree of initiative, cooperative skill, organization of rear areas, movement of supplies, and other features of staff work, among Soviet commanders of all ranks.

**9 February 1939**

INDIVIDUAL ENTRENCHING IN THE SNOW.
[Samookapyvanye v Snyegu.] Brigade Commander Molev

The author, a general officer of the Red Army, reveals once again, that considerable experimental work in warfare under winter conditions is being conducted by the Russians. Included in the article is information of military engineering value, treated in a competent, professional manner, and accompanied by drawings showing profiles of recommended individual entrenching methods. It is more than just of passing interest, that Brigadier Molev states that these experiments were conducted by troops forming a part of the so-called First Separate Red Banner Army, which is stationed in the Soviet-Manchurian area.

**10 February 1939**

COMBAT OPERATIONS BY BOMBING PLANES.
[Boyeviye Deystvya Bombardirovshchikov.] Major Shevchinko

The war in Spain abounded in action by bombing planes on both sides. Problems observed there receive the professional attention of the author, a distinguished Soviet officer.

**11 February 1939**

RESERVE ARTILLERY IN DEFENSE.
[Artillerya Rezerva v Oboronye.] I. Vlasov

The weakness of Spanish Republican (Loyalist) forces in such equipment as artillery, tanks and aviation, created specific conditions bearing influence on the utilization of the various arms, especially artillery, lack of which was so keenly felt by the Republican command.

In order to neutralize the effects caused by these shortcomings, it was necessary to render Republican artillery more mobile, and to remove any limitations on its movements.

These considerations have motivated the Republican command to create considerable artillery reserve force, wholly motorized. By skillful maneuvering this force was used for reinforcing various sectors of the front. Its mobility proved to be invaluable.

**12 February 1939**

TACTICAL TRAINING OF A SIGNAL OFFICER.
[Takticheskaya Podgotovka Komandira — Svyazista.] Brigade Commander Bulichev

The organization of signal service in modern combat has become a complicated matter. Dependence on the plan of battle and the system of command is great, and it is therefore inadvisable to limit organizers of the signal system by any prearranged plans. Plans for the signal service will be vital and useful only when their author will fully and profoundly comprehend the combat problem at hand. Dependability of signal service in combat will be gauged by the thoroughness with which the commanding officer of that service will absorb all the details of the combat problem, and by timely application of the corrections which he will find necessary to make.

**14 February 1939**

PREPARATIONS FOR NOCTURNAL FLIGHT.
[Podgotovka k Nochnomu Poletu.] Captain Mikhailov

A discussion of night flying with the attendant problems of orientation. The author finds that for beginners the altitude of 1,000 yards is best, enabling orientation both in moonlight or in total darkness.

**15 February 1939**

COOPERATION OF ARTILLERY AND PURSUIT AVIATION.
[Vzaimodeystvye Artillerii i Istrebityelnoy Avyatsii.] Major Grechkosiy

Technical discussion of problems of antiaircraft artillery acting in concert with pursuit aviation.

**20 February 1939**

FIGHTING PLANES IN GROUP AERIAL COMBAT.
[Gruppovoy Vozdushnyi Boy Istryebityeley.] Major Smirnov

The problem connected with entering into combat by fighting planes involves some very important considerations which, frequently, decide the outcome of the battle. The enemy must be discovered in time, it is necessary to select the most appropriate moment for approaching him by utilizing the sun, clouds, altitude, and delivering the first blow, which should be sudden, if possible. The element of surprise attached to the sudden attack usually decides the result of the engagement, even when the enemy has superiority in numbers. A blow of this kind is well assured when executed with the sun, or against the enemy's tail.

However, such opportunities as above are infrequent. There are times when attack has to be executed without even a moment's preparation. If the enemy notices the fighting planes as they are preparing to attack, he will immediately begin maneuvering in order to repel it. Under these conditions it is best to use frontal attack in formation. Frontal attacks are less dangerous to ships with air-cooled motors because such motors to a certain extent shield the flyer and the gas tank from the enemy's bullets.

It is advisable to make the first assault in formation of 9 to 12 ships (for a larger group maneuvering is difficult). Advantage is gained in that such an attack overpowers the enemy and breaks up his formation. Repeat assaults in formation are impossible due to maneuvering difficulties.

In retiring it is best to use almost a vertical power dive with a slight tail spin, as the speed thus attained prevents the enemy from aiming correctly. To retire from the field of battle properly is an art in itself, and it should be mastered by every flyer.

**21 February 1939**

CROSSING OF TANKS AND ARTILLERY ON REINFORCED ICE.
[Pereprava Tankov i Orudiy po Ukryeplyonnomu Ldu.] B. Komorov

Engineers test strength of the ice at place selected for the crossing. At one place ice was from 2 to 8 in. thick along distance of 20 yards. Depth of water at this point, 4.5 yards. Several methods of crossing were tried with success, namely: log tracks, boards, section of ice cut nearby and secured on top of the original ice surface by a freezing process, and on brushwood and straw frozen to the ice surface.

**27 February 1939**

RED ARMY'S NEW CAVALRY DRILL REGULATIONS.
[Noviy Stroyevoy ustav Konnitsy RKKA.] Major Chernukhin

Review of the new regulations recently put into effect in the Soviet horse cavalry.

**1 March 1939**

CORRECTION OF FIRE FROM THE TANK.
[Korrektirovanye Ognya iz Tanka.] Captain Kolomeytsev

The firing skill of the tank's crew depends on the ability to observe results of the fire and to make the necessary corrections. This requires specialized, careful training, due to changeability of conditions under which a tank crew must operate. Distances have to be determined in poor visibility, and while the tank is in swaying motion. It is difficult to determine whether misses were caused through the fault of the gunner, or because of other reasons. Tank crews must be skilled in determining distance with unarmed eye, because in the special conditions of the tank the use of measuring instruments is impracticable. Self reliance in selection of points to be subjected to fire is of paramount importance. The author recommends several methods for the instruction in correction of fire, through use of sand boxes, explosive packets, etc.

**3 March 1939**

THE ACTION ON THE HWANG-HO.
[Operatsia na Hwang-Ho.] N. Kolbikov

Tactical review of Sino-Japanese operations on the Hwang-Ho River, in the summer of 1938.

**6 March 1939**

REGIMENTAL ATTACK IN NARROW SECTOR OF THE FRONT.
[Ataka Polka na Uzkikh Uchastkakh Fronta.] Captain Blazhey

Chinese and Spanish experiences have served to prove unusual firmness and vitality of defense. Deep echeloning of modern defense, stubbornness and maneuvering skill, the ability to restore damaged firing system, and the accumulation of human power — all this demands that the attacking side must be superior in technical equipment. At the same time it is to be remembered that technical equipment alone will not suffice in breaking down a strong defense. Therefore, it is essential for the attacker to have human as well as technical superiority.

The author believes that in conducting an attack along the main axis, and against a strongly fortified sector, the width of the front of attack by a rifle regiment, supported by artillery and tanks, will be 1,000 yards or less.

The attack should be in two or three echelons. The latter method is more advantageous for better distribution of human power.

The second echelon should follow 500 to 600 yards behind the first, and the third echelon 400 to 500 yards behind the second.

More important for the attacker is to break down the forward line of the enemy's defense; therefore, in achieving this the first echelon should be supported by all the available artillery, tanks and technical combat means.

**8 March 1939**

SPECIAL FEATURES OF A MOUNTAIN MARCH.
[Osobennosti Marsha v Gorakh.] Brigade Commander Petrov

Interesting analysis of problems of mountain warfare at altitudes of over 1,000 yards.

## MARINE CORPS GAZETTE

**March 1939**

MERCHANT SHIPS AND NATIONAL DEFENSE. Livingston

COOPERATION BETWEEN THE NAVY AND AVIATION. Admiral Giamberardino, Royal Italian Navy

NEW PUPPET PARADISE. Colonel Fegan

## MILITARWISSENSCHAFTLICHE MITTEILUNGEN (Austria)

BY LIEUTENANT COLONEL E.M. BENITEZ, Coast Artillery Corps

**October 1938**

POLITICAL AND MILITARY AFFAIRS DURING THE THIRD QUARTER OF 1938.
[Wehrpolitische Ubersicht über das dritte Vierteljahr 1938.] Major General Paschek

The Czechoslovakian question, settled 26 September 1938, was undoubtedly the outstanding event of this period. It came very nearly involving

Europe in a general conflagration. Credit for the settlement of this problem should be given to Lord Runciman who was sent by Great Britain to Prague as a mediator, and to Prime Minister Chamberlain who worked hard for the sake of peace.

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RACE AND WAR.
[Rasse und Krieg.] Colonel Markgraf

During the World War, the Austrian army was comprised of men of the twelve nations which composed the Austro-Hungarian Empire, and the opportunity was thus afforded of observing the fighting qualities of various races.

According to the author, Napoleon could not have been successful in his wars against Germany if it had not been because of the German soldiers with his army. However, with the formation of a Greater Germany, Germans will not henceforth be found fighting against each other.

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LESSONS FROM THE SPANISH WAR.
[Lehren aus dem Spanischen Bürgerkrieg.] Field Marshal Gerabek

Quoting American, French, German and Russian authorities, the author discusses the most important lessons learned from this conflict.

Air attacks — especially bombing attacks — have been less effective than was anticipated. Antiaircraft defense succeeded in preventing panics. The defense seemed to be predominant. Motorized troops are of little value, unless there are suitable roads over which they can be transported. Small tanks provided with insufficient armor protection have failed, while antitank guns when used in sufficient numbers — say one gun per 100 yards of front — can break up a tank attack. The 20-mm Oerlikon antitank gun seems to be the best of its kind, and some observers believe that one of these guns per 250 yards of front is sufficient. The 20-mm antiaircraft gun is adequate for front-line defense where planes come down to a 3000-foot altitude; for rear areas, a powerful gun such as the 88-mm (3.6-in.) is required. The size of divisions should be as small as possible, to facilitate their handling.

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TRUCK DRIVING IN MOUNTAINOUS COUNTRY.
[Kraftfahrdienst im Gebirge.] Major Schmilauer

Driving over mountain roads requires considerable skill which can only be acquired through adequate training and discipline. Vehicles with caterpillar tracks are more suitable than ordinary wheel vehicles, for driving through snow.

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ELECTRO-OPTICAL ACCESSORIES FOR OBSERVATION IN FOG AND AT NIGHT.
[Elektrisch-optische Hilfsmittel für den Spähdienst durch Dunstschichten und bei Nacht.] Dr. Stäger

Haze, mist and clouds restrict visibility during a large portion of the year. For many years experiments have been conducted for the purpose of devising an instrument which will convert heat rays into visible light. Infra-red photography has shown that long wave infra-red rays can easily penetrate haze, mist and similar obstacles.

The Allgemeinen Elektricitätsgesellschaft and the Radio Corporation of America have put into practical form the use of specially constructed cathode-ray tubes. This apparatus is described and illustrated. The human eye reacts only to rays between red and violet while everything is dark at night. However, through this device warm objects show up light and cold objects dark; hence, any warm objects such as motor cars, locomotives and the like would show up on a dark night.

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THE SINO-JAPANESE WAR.
[Der Konflikt in Ostasien.] Major General von Lerch

A description of the Russo-Japanese clash at Changkufeng, and operations at Hankow and in Hopei Province.

**November 1938**

THE MUNICH AGREEMENT.
[Das Viermächteabkommen von München (Wehrpolitische Uebersicht für die Zeit vom 27. September bis 22. Oktober 1938).] Major General Paschek

The author states that the Western Powers were compelled to accede to the German demands because they were not strong enough to resist. Czechoslovakia, without strong support, would have been quickly crushed, while France with inadequate British support, would have had to face an overwhelming force. However, neither side was strong enough to win a decisive victory over the other. Mobilization in Great Britain and in the United States would have been too late, while it was doubtful if Russia could intervene through Poland or Rumania. Britain's main concern was her line of communications with Asia and her control in the Mediterranean.

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FIRE AND MOVEMENT.
[Feuer und Bewegung. Eine Untersuchung.] Field Marshal v.Gerabek

A discussion of the general principles governing fire and movement.

STRATEGIC PROBLEMS IN THE MEDITERRANEAN AND THE NEAR EAST.
[Strategische Probleme im Raume des Mittelmeeres und Nahen Ostens.] Field Marshal Schäfer

The Mediterranean Sea has possessed great strategic value since the Punic Wars. The British prevented its control by Napoleon and Britain has exercised unquestioned command of this sea throughout the nineteenth and early part of the twentieth century.

During the World War, the Mediterranean was controlled by the Allies making it possible for France to transport troops from her African possessions. After the Great War, Great Britain and France secured a footing in Palestine and Syria and pipe lines were laid from the Mosul oil fields to the Mediterranean. Italy was only given a stretch of sandy African desert.

The Ethiopian War formed an aggressive and powerful Italian nation. While France remained strong in the Western Mediterranean, Great Britain was caught unprepared and had to withdraw her fleet from Malta to Alexandria and Haifa, where there were neither docks nor suitable repair shops. The fleet thus became separated from her French ally as well as from Gibraltar and England.

According to the author, Britain today relies mainly upon her navy and air force. She lacks good harbors. For example, Gibraltar and Malta cannot be enlarged, and it is doubtful if sufficiently large bases can be provided in Cyprus, Palestine or Egypt.

France's control of the Western Mediterranean enables her to reach her African possessions. If the projected canal from Bordeaux in the Atlantic to Marseilles in the Mediterranean is constructed, then British ships would not have to go through the Strait of Gibraltar.

At present, Italy with a large army, a modern navy and a first-class air force, controls the center of the Mediterranean. She has fortified the small island of Pantelleria and has thus reduced the passage between Sicily and Lybia to narrow limits. Her attitude is a threat as well as a warning to Great Britain not to interfere with the passage of Italian ships through the Suez Canal.

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THE CIVIL WAR IN SPAIN.
[Der Bürgerkrieg in Spanien.] Major General v.Lerch

An account of the operations in the Ebro salient from 25 July to 20 October 1938. According to General von Lerch an average of 10,000 bombs a day were dropped on the Ebro River bridges during the first five weeks. However, the damage done was so insignificant that repairs were usually made the following night.

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LIGHT RAYS INSTEAD OF AMMUNITION FOR TARGET PRACTICE.
[Lichtstrahlen statt Munition für ökonomische Schieszübungen.] Dr. Stäger

An instrument manufactured by the Williamson Manufacturing Co., Ltd. — a combination of camera and pistol or machine gun — enables the aviator to test the accuracy of his aim on an airplane or other target without the necessity of firing a single shot.

**December 1938**

GAZI MUSTAPHA KEMAL. Major General v.Lauppert

A short biographical sketch of the great Turkish leader whose death occurred a few months ago.

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FINLAND, THE BALTIC SEA AND SOVIET RUSSIA.
[Finnland, die Ostsee und Sowjetruszland.] Dr. Sell

Finland ranks seventh in area among the European nations, exceeding both Italy and Great Britain in size. With a population of 3,700,000 inhabitants, she ranks twentieth in this respect. Her western neighbors, Norway and Sweden, are friendly states and no hostile acts are expected from this direction. The danger lies on her eastern boundary — Russia. However, Finland has natural defenses on the Russian border, such as swamps, lakes and forests. An air attack from Russia would encounter stubborn defense.

Finland's main industry is timber, most of which is shipped to Great Britain. The bulk of her imports come from Germany.

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INFANTRY AS AN EXPRESSION OF THE WARLIKE SPIRIT OF THE MASSES.
[Die Infanterie als Ausdruck des kriegerischen Geistes der Masse.] Captain v.Binzer

The author discusses the three essential elements in the training of a soldier, namely, patriotism, esprit de corps and confidence in his leaders.

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PILLBOXES.
[Der Bunker.] Field Marshal v.Gerabek

The author discusses three types of modern defenses. The first consists of obstacles against tanks, called "Hockerhindernisse" by the Germans and "asparagus" by the British. They are concrete beams of various lengths, imbedded vertically on the ground.

The second type of obstacles consists of curved concrete walls with deep grooves so that heavy rails may be let in to hold up advancing tanks.

The third type are pillboxes, which are known in Germany as "bunkers." These pillboxes are really tanks made of concrete, and are armed with guns or machine guns. They can be constructed for all-around fire. The greatest danger against them is from the air, because even a direct hit from a 6-inch

gun will not penetrate the concrete, although it may overturn the whole structure if the projectile happens to strike the right place.

## MILITAR-WOCHENBLATT (Germany)

By Major G.J. Braun, Infantry

### 1 July 1938

Interpretation and exploitation of the combat situation — from the enemy point of view.
[Das Erkennen und Ausnutzen einer Kampflage — im Spiegel der Gegenseite.] Colonel Dittmar

In 1917, a battalion medical officer, Dr. V . . ., published a series of articles based on his diary covering the events from the period of mobilization to October 1914. Colonel Dittmar considers these accounts very interesting, particularly the remarks on the enemy point of view.

An adversary is "conquered" when he loses faith in himself and believes that all efforts to defeat his opponent are useless. This situation, however, is hard to detect because it does not occur uniformly, although our lines of action are based upon what we suppose the enemy plans to do.

The author compares the French and German armies, discusses the efficiency of the German heavy artillery and concludes that it was the excellent machine gun support that made possible the advance of the German infantry.

Summarizing the discussion, the conclusions drawn are that it requires a good deal of experience to detect that decisive change in the adversary's morale which leads to his defeat.

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Fire direction and assignment of objectives to the artillery.
[Feuerleitungsübungen und Zielübermittlung an Artillerie und schwere Waffen.] Dorow

Cooperation of all arms is the principal characteristic of modern combat and strategy. It has been proved in the battlefields that the employment of all arms in close cooperation is now, just as in former times, the most essential requirement to attain success. The tactical assignment of the heavy arms is of great importance, either in attack or defense, since it compels the auxiliary arms to assist in the main effort.

### 8 July 1938

Reconnaissance and artillery action in a meeting engagement.
[Aufklärung und Bekämpfung von Artillerie im Begegnungskampf.] Lieut.Colonel Konitzky

The author disagrees with a statement of Lieutenant General Marx who stated that artillery reconnaissance units are too slow. While this was true during the World War, such is not the case under modern conditions since motorization and better equipment have speeded up artillery reconnaissance and readiness for action.

Captive balloons and airplanes also reconnoiter for the artillery. It should be said, however, that antiaircraft artillery has restricted aerial reconnaissance. The days when reconnaissance airplanes could fly at low altitudes unmolested are gone.

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Conduct of tactical rides.
[Die Geländebesprechung.] By "385"

The instructor should begin with an orientation of the terrain, pointing out the points of the compass (N,S,E,W) and some landmarks. No time should be saved in this connection.

The Director should not ask questions concerning location of troops. He himself should point them out, thus: "There, at the edge of the woods is a reconnaissance patrol of the first company; yonder is a heavy machine-gun section; artillery is firing from that vicinity, etc."

The discussion should take place where the commander and staff would actually be according to the tactical situation.

The orders should be brief, clear and issued without delay, based upon actual terrain conditions and not upon maps.

Life may be injected into the problem by an order from the commander or by a change in the situation.

The director should summarize the exercise explaining whether or not the mission was accomplished and also whether or not it could have been accomplished in some other manner.

### 15 July 1938

Halt in the attack and how to prevent it.
[Vom "Todesprinzip" des Angriffs und seiner Uberwindung.] Major von Kübler

According to Clausewitz the attack is always linked to the defense. This defense is a dead weight, a sort of "original sin." How can this halt in the attack be avoided?

In general, it can be accomplished by assigning a distant objective — hostile artillery positions — and exploiting the success attained by officers full of initiative. It is necessary to keep up the advance by means of reserves. First, with the infantry; second, with tanks, sappers, antitank troops, communication troops, motorized units, aviation and munition columns. The lack of such reserves will paralyze the attack. However, it must be borne in mind that in order to attain success, these reserves must be properly employed at the right moment and at the decisive place.

Tanks, according to the author, are not needed by the attacker during the first phase of the combat. Their intervention in battle will be more effective if they are employed when the infantry advance commences to slacken, when the artillery fire becomes weaker, when the enemy defense stiffens or when counterattacks are launched. The same can be said in regard to the use of aviation. The air force should participate to invigorate the infantry attack that has begun to slow up.

In short, the attack should be vigorous and fast and must be kept up uninterruptedly.

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Thoughts on motorization.
["Motorisierte" Gedankensplitter aus aller Welt.] Lieut.Colonel Braun

1. The new "Bersaglieri" regiment is organized as follows: Regimental headquarters, with an antitank section and a communications platoon.

The first battalion — cyclists — has three companies and one machine-gun company; each company has nine light machine guns. The bicycles can be taken apart for transportation in trucks.

The second battalion is motorized. It has only three companies. While it has no light or heavy machine-gun company, each group has two light machine guns. The headquarters company has a hand grenade section.

The third battalion consists of a motorcycle rifle company of 4 sections, one of which is a heavy machine-gun section. The tank company has 11 tanks.

Colonel Sozzani, Italian Army, experienced chief of the Bersaglieri, comments on the new organization and states that the different rates of speed of the units makes it necessary to have two echelons in the march. The motorcyclists can travel faster than the cyclists of the tank company. In order to use the regiment as a unit, the faster echelon must wait for the slower one. The cyclist battalion can be transported in trucks and is so trained; but the battalion does not have enough vehicles and it is necessary to requisition them from the column commander. In addition, no great advantage is gained because the tanks remain behind.

In combat, the motorized riflemen become ordinary infantrymen and are slower than the cyclists and motorcycle riflemen. The reliance on motor vehicles is often a disadvantage.

The combat power of the motorcycle rifle company is very little; it lacks heavy weapons.

The tank company rarely fights with the motorcycle riflemen who, in most cases, are in front or on the flanks.

In order to improve the Bersaglieri organization, Colonel Sozzani makes the following recommendations:

Assign 150 trucks of special design, for use in the mountains, instead of the 86 trucks now provided for. Thus the regiment will be able to move utilizing its own means.

Organize two cyclist battalions, each of a headquarters company and three rifle companies, allotting a sufficient number of trucks to each. The third battalion should be a motorcycle rifle battalion of two companies, each company being provided with both heavy and light machine guns.

A new type of truck should be furnished. This vehicle must have power, yet it must be light, should be able to climb high ground, have antiaircraft protection, and special equipment for entrucking and detrucking riflemen quickly; must have special arrangements for storing bicycles, baggage, munitions and food supplies. The "Fiat 618" used at present is not suitable for these purposes.

The number of machine guns in each group should be increased from one to two, and "chassis" should be provided for transporting tanks over long distances.

Colonel Sozzani believes that the efficiency of the Bersaglieri would be greatly increased if the above recommendations were adopted.

2. Can tanks pass through their own infantry without endangering it?

Colonel Braun disagrees with the statements made by Major Doege in which the latter says that it is no longer possible for tanks to follow the tactics of passing friendly infantry, due to the noise, smoke, fog and conditions of modern combat. On the contrary, the author says the Russian, French, and German Field Service Regulations, for example — as proven in the Spanish War and the Sino-Japanese War — visualize tanks passing their own infantry in the assault. Tanks will advance at a speed of about 7 miles per hour; speeds of 18 miles an hour in combat are products of the imagination. The interval between tanks is from 30 to 50 yards; between combat echelons, about 550 yards. This provides sufficient space for the infantry to go through. Accompanying tanks as well as exploitation tanks must go through their own infantry if they are to accomplish the mission of supporting and invigorating the infantry attacks. A well trained infantry can and will advance between or immediately behind the tank waves.

### 22 July 1938

Scope and terrain of the German and opposing plans of operations during the spring of 1918.
[Raum und Gelände in den deutschen und gegnerischen Operationsplänen Frühjahr 1918.] Dr. Kühn

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Infantry in the attack.
[Infanterie im Angriff.] Captain Meier-Welcker

The machine gun has unquestionably increased the power of the defense. Prior to 1914, the rifle was the decisive weapon in combat. The machine gun is above all a defensive arm. In order to carry out its mission in combat, the infantry must break through the enemy lines and its advance must be

supported by other weapons, such as special cannon and grenades. After the first surprise, the hostile infantry fire will increase in volume and it is, therefore, important that advantage be taken of that short period, when the enemy has been surprised, in order to advance quickly over hostile trenches and field works penetrating deep into enemy territory.

The automatic rifle should be as light as possible, so that it may be used quickly; the infantry can only succeed when it has broken through the enemy position.

The infantry is not the independent arm of past centuries; today, the infantry is the center of cooperation of all arms which must work combined in order to attain success.

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THE PROBLEM OF COUNTERBATTERY.
[Zur Frage der Artilleriebekämpfung.] Lieut.General Marx

The author discusses the necessity of training artillery with air observation on the firing range and full maneuvers in preparation for field service.

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MARCH OF MOTORIZED UNITS IN CLOSE PROXIMITY TO THE ENEMY.
[Der Kriegsmarsch motorisierter Verbände.] Dr. Wim Brandt

Most modern nations have made great strides in motorization of their armed forces. This stepping up of the rate of march and march distances has altered reconnaissance distances which now are performed by armored cars and motorcycles for the motorized unit. Naturally to take advantage of the speed these units are roadbound and the defender concentrates on road blocks, outposts, mines and flexible steel concertina wire, all manned with appropriate weapons. The defender has the advantage of sight and sound over those in the motorized unit.

The employment of armored cross-country vehicles permits evasion of defended localities and makes these motorized units ideal for closing gaps in a line, concentrating a superiority of fire at decisive points and occupying vital terrain ahead of normal moving troops.

The rapid advance to a decisive point by motorized units is only an unfilled hope unless it is provided with adequate security during that march. This security must come from the weapons and personnel of yesterday. The author suggests the cyclist as he can cover 12 to 15 miles per hour or 60 miles per day without too great fatigue. Fifteen cyclists per truck will permit 5 for reconnaissance and 10 for replacements — the latter riding on the trucks. In this manner the motorized unit with its cyclist reconnaissance group can cover 125 miles per day.

The cyclist can hear and see everything, can travel over poor roads and paths, is noiseless, can turn about rapidly and as rapidly disappear in a ditch or brush. Should a bicycle be lost the loss is not great.

The author feels that these partially motorized cyclists present a solution of enabling motorized units to dash toward an enemy with safety.

Dr. Brandt suggests the following road formations for a motorized unit.

(1) Armored car reconnaissance units, 2-4 vehicles
(2) 5 cyclists
(3) Motorcycle with side car with light machine gun
(4) Antitank gun
(5) Commander of the point with two-way radio
(6) 2 or 3 cyclist messengers
(7) Light truck with 10 cyclists
(8) Miscellaneous.

As alternative formation he suggests:

(1) Armored car troop, 2-4 vehicles
(2) 5 cyclists
(3) Heavy armored car with armor-piercing gun (light tank)
(4) Commander of the point with two-way radio
(5) 2 or 3 cyclist messengers
(6) Truck with 10 cyclists
(7) Miscellaneous.

In this manner the armored cars perform the reconnaissance duties and the cyclists furnish the security, the searching houses, etc., to be performed by those cyclists on the trucks.

Visual communication is maintained within the point of the advance guard and by radio with the higher commanders.

Experience in Spain has shown that the point can travel 12 to 15 miles per hour and the motorized units following moving by bounds can move three times as fast. Also columns moving in closed formation are too vulnerable to air attack, and are slowed down in hilly country. When closed up they cannot get the "running" start required which not only makes motors work too hard but also makes too many trucks casualties on the roadside. During dry weather closed columns create dense dust clouds which make fast movements precarious.

Dust clouds also betray the columns to hostile aviators; therefore, fast moves from covered area to covered area are best since hostile aviation cannot keep an area constantly under observation. These covered areas or road stops (next to tree-shaded roads) must be protected from hostile mechanized and air attacks by the antitank guns and machine guns. In moving from halting place to halting place the main body moves with about 200 yards distance between vehicles.

Motorized units must be adequately provided with antitank and antiaircraft weapons.

(1) Armored car troop
(2) Partially motorized point
(3) Reconnaissance company motorized
(4) B — Woods
Head of main body at new halting place
(5) Individual light trucks with 200-yard intervals
(6) Remainder of main body in old halting place
(7) Miscellaneous.

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UTILIZE THE POWER OF THE ARMORED CAR WEAPONS.
[Nutzet die Schärfe der Panzerkampfwagenwaffe.]

By the author of the series of tactical lessons in Troop Leading.

A reply to a critic of the approved solution of a problem involving the use of armored cars.

## MILITARY ENGINEER

### March-April 1939

NOTES ON CAMOUFLAGE TESTING IN TEXAS. Colonel Finch
POPULATION CHANGES AND THE NATIONAL DEFENSE. Robert Cook, Editor, "Journal of Heredity"
STRATEGIC MINERAL SUPPLIES IN GERMANY. Major Roush

### May-June 1939

WAR WITHOUT GOLD — THE MYSTERY OF "REBEL" FINANCE. Gault Macgowan
HYDRAULIC MODEL DESIGN — DISTORTION OF SCALE. Captain Vogel
THE PRESENT STATUS OF MANGANESE. Major Roush

## MILITARY SURGEON

### March 1939

MEDICAL DEPARTMENT LESSONS FROM THE FOURTH ARMY MANEUVERS, 1937. Colonel Hilton

### April 1939

IS AMERICA PHYSICALLY FIT TO GO TO WAR? Captain Calver

### May 1939

THE VETERANS' ADMINISTRATION IN NATIONAL DEFENSE. Brigadier General Hines
NOTES ON THE CIVILIAN CONSERVATION CORPS OF INTEREST TO THE PHYSICIAN. Captain Winsor

## NAVAL INSTITUTE PROCEEDINGS

### March 1939

EARLY RUSSO-JAPANESE RELATIONS. Lieut.Commander Smith-Hutton
THE DEVELOPMENT OF WAR GASES AND THE NAVY. Captain Brown

### April 1939

A MERCHANT MARINE NAVAL RESERVE. R.T. Merrill
THE VALUE OF CCC DUTY TO RESERVE OFFICERS. Lieutenant Peck, Nav-Res

### May 1939

AN ORGANIZATION FOR THE UNITED STATES FLEET. (Prize Essay, 1939) Rear Admiral Taussig

## PIONIERE (Germany)

BY LIEUTENANT COLONEL E.M. BENITEZ, Coast Artillery Corps

### November 1938

GENERAL PULLET. Lieut.Colonel Grosse

A biographical sketch of this distinguished Prussian engineer officer who was mainly responsible for the defenses of Danzig when this city was besieged by the French in 1807. In 1813, six years later, he was with the Russo-Prussian Corps that attacked and captured this fortress.

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ENGINEERS AND FORTRESSES IN THE NAPOLEONIC ERA.
[Vor 125 Jahren: Pioniere und Befestigungen in der Napoleonischen Epoche.] Major General Klingbeil

A description of the campaign of the Elbe from 10 August 1813 to the battle of Leipzig in October of the same year.

According to the author, Napoleon did not take advantage of interior lines to defeat in detail each of the Allied armies encircling him. No bridging operations of any importance were conducted until the Silesian army crossed the Rhine early in 1814.

After the battle of Leipzig, the French had to withdraw across the Weisse Elster, and the French Engineer Colonel Mortier received orders to blow up the bridges after all the French forces had crossed. However, during Colonel Mortier's absence a corporal blew up the bridges prematurely and a large number of troops of the French rear guard were cut off from the main body and compelled to surrender to the Prussians.

One of the results of the Battle of Leipzig was that 150,000 veteran troops were left behind in German fortresses and thus lost to the French. Timely orders would have permitted the withdrawal of at least some of them.

WARTENBURG — 3 OCTOBER 1813.
[Wartenburg — 3 Oktober 1813.] Colonel Heye

An account of the crossing of the Elbe, near the village of Elster. Two bridges were constructed, one by the Prussians and the other by the Russians. However, insufficient reconnaissance led to the belief that the French position was weakly held. The river crossing began at 7:00 AM and was strongly contested. After severe fighting, however, the Prussians succeeded in turning the French position and by the afternoon of the same day the French withdrew along the bank of the Elbe.

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CONSTRUCTION OF AN AIR RAID TUNNEL.
[Bau eines Luftschutzstollens.] Captain Liebach

A description of the construction of an air raid shelter with capacity for 500 men.

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COMMENTS ON THE GERMAN MARCH INTO SUDETENLAND.
[Betrachtungen zum Einmarsch in das Sudetenland.] Major v.Ahlfen

The author made the trip into Sudetenland at the time of its occupation by German troops 3-9 October 1938. This account is illustrated by 20 photographs showing Czech defenses and bridge demolitions.

The Czechs destroyed all bridges and even culverts, but did not block the branch roads, so that by making use of side roads, the author had no difficulty in getting through by automobile.

Some of the wire entangelements in wooded sections were apparently erected in a hurry and offered no real obstruction. The demolition of bridges was skillfully done in some cases and poorly done in others.

Pill-boxes of modern design, of reinforced concrete varying from 7 to 12 feet in thickness with loopholes for machine-gun firing to the front and either flank, are illustrated by photographs.

Antitank defenses consisting of square iron posts and V-shaped ditches had been constructed to block the advance of tanks.

An article published in the "Wehrtechnische Monatshefte" states that the Czech front line defenses were practically complete, but that only a small portion of the rear fortifications were ready and fit for defense. The total cost of the works is estimated at about $350,000,000, requiring a total of about 700,000 men to man the defenses. This would have left practically no field army available for reserve.

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CONSTRUCTION OF AN 8-TON TEMPORARY BRIDGE WITH FLOATING SUPPORTS.
[Bau einer 8t-Behelfsbrücke auf schwimmenden Unterstützungen.] Lieutenant Linke

A detailed account of a temporary bridge across a canal taking off the Oder, by the 2d Company of the 32d Engineer Battalion. The bridge was constructed in 4 hours and was tested successfully for 12-ton loads.

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RAILWAY DEMOLITION BY AIRCRAFT IN VOLHYMIA.
[Bahnzerstörung in Wolhynien durch Flugzeugbesatzung.]

In 1916, a German officer, Lieutenant von Cossel, was sent by airplane to a point about 40 miles behind the Russian line, with the mission of making a breach in the main line of communications in order to hinder the Russian advance upon Lemberg.

Lieutenant Cossel was dropped at daybreak about six miles from the selected point, and travelling through dense forests arrived at the spot by dusk. Under cover of darkness he placed the charge exploding it as the train passed, derailing the engine and ten loaded cars. He returned to the starting point, where he was again picked up by airplane and returned safely to the German lines.

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ICE SAILING.
[Eisfegeln.] Lieutenant Lenkeit

Ice sailing is a favorite winter sport in East Prussia, where the ice is not spoiled by excessive snow, as is the case in more northerly Baltic countries.

There are different classes of yachts and, according to the author, a sail area of 50 square feet has proved to give the maximum speed.

## QUARTERMASTER REVIEW

### March-April 1939

MARS MOTORS EAST. Roger Shaw
THE INDIAN DID NOT VANISH. D'Arcy McNichol
THE ARMY AND INDUSTRY. Major Wiese
DEMOCRACY AND DICTATORSHIP. Lieutenant Wilmeth

## RASSEGNA DI CULTURA MILITARE (Italy)
### (Rivista di Artiglieria e Genio)

BY LIEUTENANT COLONEL E.M. BENITEZ, Coast Artillery Corps

### October 1938

AGRICULTURAL POSSIBILITIES IN ITALIAN AFRICA.
[Le possibilità agricole dell'Africa Italiana.] General Teruzzi

Twenty years ago, Lybia was described as a sandy waste. The agricultural census of 21 April 1937 shows the planting of 1,800,000 olive trees, 1,500,000 almond trees and 31,000,000 vines. There are at present 1733 colonial families. Irrigation, particularly in the temperate regions, has increased agricultural production.

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THE AUGUSTAN ERA.
[Età Augustea.] General Corselli

Italy celebrates this year the 2000th anniversary of the birth of Emperor Augustus. General Corselli gives an account of the chief events between the death of Julius Caesar, 15 March B.C. and the death of Augustus. Mussolini has said: "Rome must appear before the world: great, orderly, powerful, just as it was during the days of Emperor Augustus."

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CZECHOSLOVAKIA.
[Cecoslovacchia.]

This is the first of a series of articles on Czechoslovakia.

The republic was created on 20 October 1918, with a proclamation by the National Council in Prague, and on 14 November of the same year, Masaryk was acclaimed as First President of the Republic.

Czechoslovakia had an area of 140,493 square kilometers and a population of 14,730,000 inhabitants of which 7,000,000 were Czechs, 2,800,000 Slovaks, 3,400,000 Germans, 600,000 Ruthenians, 150,000 Poles, and 800,000 Hungarians.

The author discusses the Sudeten question as seen from the Italian point of view.

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REFLECTIONS ON STRATEGY DURING THE WORLD WAR.
[Riflessi strategici della grande guerra.] (I) Colonel Mattioli

The first instalment of a study on strategy during the World War in which Colonel Mattioli discusses initiative which he defines as the initiation of a line of action which will compel the enemy to follow the plan that has been anticipated by us. Capacity of decision requires a strong will, tenacity of purpose, audacity and complete assurance of employment of the moral and material forces. Tannenberg and the breakthrough in Gorlice are two striking examples. The former was a decisive battle, because it resulted in the complete annihilation of an entire Russian army. The latter, on the other hand, while it could have produced brilliant results, was only a mediocre success, because the Russians were able to come back with fresh forces on the same front.

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THE TACTICAL EMPLOYMENT OF FRENCH LARGE UNITS.
[L'impiego tattico delle grandi unità francesi.] (II) Colonel Garrone

The commander of a large unit is responsible for the measures necessary to protect the unit in depth from attacks by mechanized forces.

The author discusses antitank defense, offensive combat, approach march, contact, development, attack and cooperation between the artillery and the infantry. The French doctrine, he states, gives up its methodical procedure and resorts to a sudden and vigorous attack when surprise can be secured, when dealing with a weak adversary and when terrain favors the attacker. When the enemy is defeated and withdraws, bold and relentless pursuit must be initiated at once. If, on the other hand, the attack fails, the infantry should dig in, hold the ground, organize its antitank defense, replenish its munitions, while the artillery protects the infantry with barrage and counterpreparation fires.

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THE MOTORIZED DIVISION IN A DEFENSIVE SITUATION.
[La divisione motorizzata nella manovra divensiva.] (IV) Colonel Trabucchi

An illustrative problem showing the commander's decisions with the orders issued to the various units.

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ANTITANK DEFENSE.
[Anticarro.] Colonel Mancinelli

According to an article published in the "Rivista di Fanteria," March 1938, the French division has fifty 25-mm, and six 75-mm antitank guns, while the German division has seventy-five 37-mm antitank guns. The French tendency is to increase the number of these types of guns in the division.

In a modern army the tank unit will probably consist of a mass of about 100 medium tanks and the division antitank unit will consist of about 75 guns, wherever the nature of the terrain facilititates tank attacks.

Colonel Mancinelli does not believe in the use of antitank guns as infantry weapons, even if the expected enemy tank attack fails to be launched. The artillery should not be used against tanks, but against the infantry which follows the tanks; it should also be employed in counterbattery work and to lay down concentrations against enemy reinforcements.

Antitank guns should open fire at about 550 yards range. These guns can stop the tank attack, unless caught by surprise.

### November 1938

THE BATTLE OF ITALY (VITTORIO VENETO — 24 OCTOBER-4 NOVEMBER 1918).
[La battaglia d'Italia (Vittorio Veneto — 24 ottobre-4 novembre).]

Opposing forces, as shown on sketch.

CENTRAL POWERS:

Group of Armies of the Trentino (Archduke Joseph)
Tenth Army (8 divisions)
Eleventh Army (11 divisions)
In Reserve: 4 divisions

Group of Armies of the Veneto
Group Belluno (Marshal von Goglia — 12 divisions)
Group of Armies Boroevic
Sixth Army (9 divisions)
Fifth Army (8 divisions)

Total: 58½ divisions — of which 6 were cavalry — consisting of the following: 724 battalions, 6030 cannon. Total of 1,170,000 men.

Archduke Joseph was nominally commander of all forces.

ITALIAN AND ALLIES (Marshal Diaz, commanding):
Seventh Army (4 divisions)
First Army (5 divisions)
Sixth Army (6 divisions)
Fourth Army (9 divisions)
Twelfth Army (3 Italian and one French division)
Eighth Army (15 divisions)
Tenth Army (2 Italian and 2 British divisions)
Third Army (4 divisions)
In general reserve: Ninth Army (6 divisions)
Cavalry Corps (4 divisions)

Total: 57 divisions (3 British, 2 French, 1 Czech, and 1 American Regt.); 704 battalions, 4 cavalry divisions, 7,718 guns (of which 250 were British and 200 were French); 600 airplanes; 7 dirigibles; 36 aerostatic sections. Total: 912,000 men.

THE BATTLE OF VITTORIO VENETO, 24 OCTOBER-4 NOVEMBER 1918

On 21 October the Italian high command issued the following directive to the armies, outlining the plan of action:

"Attacking from the region of the Grappa to separate the Austrian armies of the Trentino and the Piave; immediately thereafter attack the Boroevic group piercing the front at the junction point of this group with the Vittorio Veneto group; then concentrating on the latter and cut off Austrian communications through Belluno and Cadore."

The battle commenced on 24 October with an attack by the Italian Fourth Army, which served to attract the Austrian's attention. According to the plan, the Piave was crossed 27-28 October, followed by a successful attack on 29-31 October and the pursuit 1-4 November.

The Italian losses were: Italians, 36,498; British, 1840; French, 588; Americans, 5.

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THE MARCH ON ROME.
[La Marcia su Roma.] Marshal de Bono

A radio address made in Rome on 28 October 1938, giving an account of the use of the Fascist Power and Mussolini's march on Rome in 1922.

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COLONIES IN LYBIA.
[Coloni in Libia.] Marshal Balbo

An account of the Italian colonization in Lybia. Land has been allotted to colonists since 1933. Intense colonization plans were formulated in 1938 and it is expected that when the present projects are completed there will be about 140,000 Italians in the country.

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STUDY ON THE STRATEGY OF THE WORLD WAR (AUSTRIAN PLAN).
[Studi di strategia sulla guerra mondiale (Il piano austriaco).] General Ago

At the beginning of 1909, Austro-Hungary seized the provinces of Bosnia and Herzegovina, while impotent Serbia could do nothing about it. The situation in 1914, however, was different, because in case of conflict with Austria, Russia was bound to come to Serbia's assistance.

There were two certain Austrian enemies: Serbia and Russia; Rumania and Bulgaria were uncertain factors. Italy had been a member of the Triple Alliance since 1882 and was bound to help Austria in a defensive war only. Feeling between the two countries had never been very friendly; in fact, according to General Segre, Emperor Charles wrote to Emperor William in August 1917: "The whole army desires war against Italy."

The Austrian frontiers to the southwest and to the south were favorable as the terrain presented strong positions as regards Italy and Rumania. In regard to Russia, the terrain was open and there were only two important military fortresses: Cracow and Przemysl. From the military point of view, the best strategy would have been an immediate offensive against Russia with all available forces.

The German plan which had been worked out and minutely prepared for so many years, called for a rapid invasion of Belgium and a crushing attack against France. Austria had to conform to the German plan, because she could not attack Russia successfully without German support.

An attack against Serbia for military and political reasons must be conducted rapidly and vigorously. Serbia lacked rifles, machine guns and guns as well as munitions, and had a large variety of arms. France and Russia had commenced to send supplies but very slowly. Transport of materials, particularly from Russia, was even slower. It became, therefore, very important to attack and crush Serbia with the least possible delay.

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THE GREAT ARMY EXPERIMENTS OF THE XVI YEAR.
[Le grandi esercitazioni sperimentali dell'anno XVI.]

The organization and development of the Italian army requires the solution of the problem of division organization. The division should be a strictly offensive organization capable of maneuvering and taking advantage of transportation facilities.

A division of two infantry regiments, one mortar battery and a regiment of field artillery fulfills the requirements suitable for the use intended.

With the motorization of two divisional groups and all services, the above division possesses flexibility and can be readily moved by motor. The logistic problem is also simplified.

In regard to small units, it is believed that the platoon of two squads is better than that of three squads; the increase of automatic rifles in the squad from one to two is also preferable.

The experiments conducted by the army are based as a result of intensive studies oriented on a "fast war."

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A METHOD TO DETERMINE THE OCCULTING POWER OF FOG AND SMOKE.
[Un metodo per la determinazione del potere occultante delle masse di nebbie e di fumi artificiali.] Dr. Ficai

Description of a series of experiments conducted by Dr. Ficai to determine the occulting power of smoke produced by various chemicals. The experiments prove that the density of smoke is increased by the presence of moisture in the air.

**December 1938**

REFLECTIONS ON STRATEGY DURING THE WORLD WAR.
[Riflessi strategici della grande guerra.] (II) Colonel Mattioli

If we wish to hold the initiative, we can never be too strong, which means that all forces should be at the proper time at the selected point. Any reserve constituted for other than tactical purposes, that is, for the purpose of keeping up the strength of the attack, will arrive too late for the exploitation of success. It would appear, then, that a strategic reserve is superfluous. If the plan of operations has been properly studied, there can be no surprise such as to endanger success. A strategic reserve will imply a lack of self-confidence, furtive glances at the enemy's plans, weakening of our principal mass and wavering in our determination.

The conclusion is then, definitely, that if we wish to maintain the initiative, to act with a clear plan and with firm will, there is no need for a strategic reserve.

The initial German plan of the campaign did not provide a reserve. The plan had been prepared in all respects and the Germans from the outset operated successfully without a reserve army.

On the other hand, the Fourth Army, held in reserve by Joffre, did not put him in position to shape events in his favor. His orders came late, he obeyed the law imposed upon him by the Germans, and could only endeavor to neutralize it. Thus the army in strategic reserve did not accomplish its purpose.

The secret of success lies in the initiative, but it is a matter of importance, even though secondary, whether it is translated into action on interior or exterior lines.

The conclusion is that an enemy can be destroyed or put out of action only by turning his flank or surrounding him. This is the conception of the battle of Cannae, upon which Schlieffen based his plan of operations.

An army must be trained in an atmosphere free of anxiety. If it has all that is necessary in time of peace, it is possible to develop its spiritual qualities and improve its training to a point where the importance of numbers is reduced or entirely neutralized.

With an army thus trained and equipped, prepared to be mobile and maneuverable, we may meet even superior forces. With such qualities, an army while inferior as a whole to the enemy, may be morally and materially superior at the decisive point.

LUDENDORFF. (II) Prof. Folchi

On 11 November 1917 Ludendorff had a conference at Mons with Generals von Kuhl and von Schulenburg. All three agreed on the necessity of securing a decision through a well prepared and powerful offensive. The spot selected was to the south of St. Quentin, in the general direction of Amiens.

Three armies were to participate in this offensive: the Second Army (General von der Marwitz) and two newly created armies — the Seventeenth and the Eighteenth, to be commanded, respectively, by General Otto von Below brought from Italy, and by General von Hutier, the conqueror of Riga; a total of 63 divisions of which 50 had been specially trained for this offensive.

The attack was launched at daybreak, 21 March 1918. Although the Seventeenth Army tried to advance and failed to open a breach for the Second Army, as provided in the general plan, the Eighteenth Army had a great success. Von Hutier crushed the British Army under General Gough and dashed boldly towards Montdidier.

The Allies realized the seriousness of the situation and the British consented to place their troops under the Supreme Command of Foch. The German advance was finally stopped on 23 March and Ludendorff then ordered the suspension of the attack.

In view of the failure of the submarine campaign, the author believes that Ludendorff should have remained in the defensive. However, after having decided that an offensive was necessary, all available reserves should have been thrown in the Battle of Amiens.

On 18 July the "Battle of France" commenced. The German army was gradually compelled to give ground; the possibility of a German victory had vanished.

The Emperor fled, Ludendorff, like Napoleon, also became a fugitive, while Hindenburg was the only great soldier who took part in the new government.

Ludendorff, however, will remain in history as the great strategic genius of the World War and certainly one of the greatest captains of all times.

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THE PREPARATION OF ANTIAIRCRAFT FIRE.
[La preparazione del tiro controaerei.] Captain Borsani

A technical discussion of ballistics and mathematical computations involved in the solution of antiaircraft fire.

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COMMENTS ON THE EMPLOYMENT OF PERMANENT FORTIFICATIONS.
[Considerazioni sull'impiego della fortificazione permanente.] General Cardona

The value of permanent fortifications has been a much debated question; however, the experiences of the World War permit us to visualize the functions, scope, principles and characteristics which should conform to the war of the future.

In the World War, the fortified region of the east gave the French time to mobilize and held strong German forces from the theater of the decisive battle.

The Belgian fortresses, although they were quickly reduced, rendered valuable service.

Verdun remained throughout the war, a strategic lever of maneuver of the French army and particularly during the first retreat from the frontier, during the Battle of the Marne (in cooperation with the fortified region of Paris) and during the final counteroffensive.

The small fortress of Maubeuge held temporarily one German army corps which missed the battle to the southwest.

The permanent Austrian fortresses in the Italian frontier enabled the Austro-Hungarian army to defend the Trentino with relatively small forces.

Field fortifications should be located so as to close a frontier at the main points of invasion, and at such places at defiles and bridgeheads so as to facilitate an invasion of an enemy country. The days of large fortresses are past. Modern forts will be small, scattered and concealed with obstacles closing the gaps between them.

A good road and railway net is indispensable to the defense. As von Moltke said: "At the frontier, the most powerful means of defense is a good railway net, and the best protection of the railway itself is the offensive."

## RESERVE OFFICER

### March 1939

DEFENSE PROBLEMS AND THE RESERVE CORPS. The Honorable Harry H. Woodring, Secretary of War

### April 1939

THE ARMY OF THE UNITED STATES. Brigadier General Chaffee

## REVUE DE L'ARMEE DE L'AIR (France)

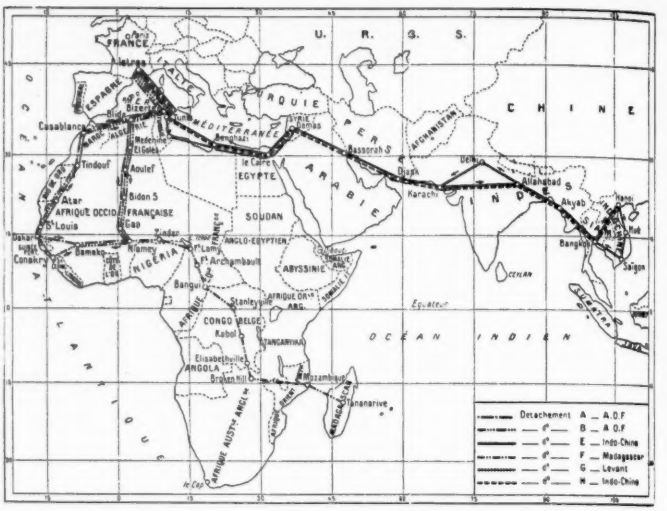
BY COLONEL L.H. BRERETON, Air Corps

### September 1938

OVERSEAS AIR MANEUVERS.
[Les Manoeuvres aériennes d'Outre-mer.]

This complete issue is concerned with the overseas maneuvers conducted by a detachment of the French Air Army in the fall of 1937.

The force consisted of approximately one hundred bombardment type aircraft and approximately five hundred officers and men.




FRENCH OVERSEAS AIR MANEUVER, FALL OF 1937

The initial concentration was completed at Istres, from which base the force proceeded to Tunis. Thereafter the concentration was split into detachments of varying strength and sent to the various colonial dependencies.

Formations covered French West Africa, French Equatorial Africa and Madagascar. Additional flights were sent to Syria and Indo-China. A distance of approximately 440,000 miles was flown, of which 93,000 was over water. Only one accident occurred.

The chapters covering meteorology are of considerable interest.

As a result of these maneuvers it can be stated that, as regards heavy aviation, the Mediterranean has ceased to be an obstacle.

Within 48 hours, the heavy air units can be concentrated in Northern Africa ready to carry out their mission. In four or five days, these same forces are capable of intervening in Equatorial or Western French Africa.

The mission of the Air Force has been enlarged, it no longer is restricted to national defense of France alone, but also to "Imperial Defense."

### October 1938

THE ARTILLERY MUST HAVE AIR OBSERVATION.
[Il faut doter l'Artillerie d'observatoires volants.] Lieut.Colonel Verdurand

The World War cost France, in four years of hard struggle, over 1,500,000 dead, thousands of wounded, besides depleting the munition stocks during the first six weeks of combat. This alone should be sufficient argument to show how important it is from the beginning of a war to exercise a judicious expenditure of munitions.

The artillery needs air observation, but the autogiro is not the solution. It is more expensive and more fragile than the airplane; it is difficult to land when the wind is blowing and does not give as good a field of vision.

The characteristics of an airplane suitable for artillery observation are the following:

Small plane, 70-100 h.p.
Pilot and observer, in front; motor in rear
Maximum speed: 70-75 miles per hour
Minimum speed: 30 miles per hour
Landing space, without wind: less than 30 yards
Excellent maneuverability in flight
Capable of being dismounted and transported or towed by truck
Double set of controls
Pilot seat near that of observer to permit conversation between them
No armament required
Fuel capacity: 4 hours at 55 per cent of maximum power
Short range radio and radio telephone.

In general, the equipment should be simple, avoiding useless complicated mechanisms, so that the plane will always be ready for duty without requiring special attention.

Built in large quantities, this type of plane should not cost more than a 5-ton truck. Thus, at a relatively small cost it will be possible to provide two of them to each artillery battalion. The experience of the World War shows that, thanks to the dual control system, artillery officers can be trained to pilot the planes without the necessity of sending them to special training centers.

It is inconceivable that field artillery battalions firing expensive ammunition in such large amounts can be any longer deprived of an adjunct which will be so valuable in assuring fire efficiency.

AVIATION CANNON.
[Les cannons d'avions.] René Maurer

There are two ways of increasing the fire power of the airplane: by increasing the number of small caliber weapons or by increasing the fire power of the weapon itself.

After discussing the latter method, the author concludes that the ballistic superiority disappears for calibers of over 20-mm and that larger calibers will prove to be less efficient than the multiple machine gun which will give more fire volume.

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STRATOSPHERIC ASCENSION OF THE "EXPLORER II." ITS SCIENTIFIC AND TECHNICAL RESULTS.
[L'ascension stratosphérique de l'"Explorer-II." Ses résultats scientifiques et techniques.] Reysa Bernson

A description of the stratosphere balloon "Explorer II" and its equipment. The expedition was commanded by Major Stevens, with Major Anderson, U.S. Air Corps, as pilot.

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THE NATIONALIST AVIATION IN BILBAO.
[L'aviation nationaliste à Bilbao.] M. Matignon

Information taken from the Italian publication "Ala d'Italia," June 1938, giving a detailed account of the Italian Air Force in the reduction of the famous "Iron Ring" defenses.

## REVUE DE CAVALERIE (France)

BY MAJOR L.K. TRUSCOTT, JR., Cavalry

**November-December 1938**

THE 2D HUSSARS.
[Le 2me de Hussards.]

A resume of the history of a famous French cavalry regiment, from its organization in 1735, through the World War. Twelve illustrations show uniform and equipment at different periods.

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TANKS IN ANTIQUITY.
[Le char de guerre dans l'antiquité.] M. Février

The author of this article is Director of Studies for Semitic Antiquities at Sorbonne. He finds first documents relative to chariots with the Sumerians, in what approximates present day Irak, about 4000 B.C. From archeological discoveries, the author describes the structure of the chariots, their armament, and tactical employment. As the Sumerians used no bows, the armament of the chariot consisted of javelins; the tactical role fulfilled the need for a mobile arm to fight at a distance, to protect the heavy infantry, assist the attack, and exploit success. Owing to the superiority of hostile archers, the Sumerian chariot suffered a temporary eclipse, but the eclipse was of short duration. From about 300 B.C., the chariot existed in greatly improved form. The author describes chariots among various ancient nations, and indicates the method of employing them in combat. In this connection he points out that greatest progress in development was attained by the Egyptians and Assyrians "who had adopted the chariot from peoples of Asia Minor, and consequently were less impeded by weight of tradition." The author outlines some of the technical progress in development.

About 2000 B.C., cavalry appeared in the Assyrian armies, then the military power of the ancient world. Until the ninth century B.C. when cavalry appeared in an independent role, it operated in close liaison with chariots. Each chariot accompanied by mounted men formed a tactical group.

The author traces chariots to about the beginning of our era, by which time development of cavalry and increased power of infantry to withstand chariot attacks had rendered the chariot obsolete.

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SADDLE AND SORE BACKS.
[La selle et les blessures du dos.] Chef d'escadrons Fix

The author refers to the fact that sore backs rendered the majority of Sordet's horses unfit for service during the early days of the World War, and points out that such price is the result of ignorance or indifference. He then describes what the rider should know of the skeleton, muscles, skin, circulation, and conformation of the back, preparatory to describing the placing of the saddle so that it does not interfere with free play of the shoulder. The author then outlines how to prevent saddle sores and to protect threatened points, under three heads: care in saddling, march discipline, unsaddling and care of the back.

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BREEDING IN THE SOUTHEAST.
[L'élevage dans le Sud-Ouest.] Major de Monbrizon

A description of breeding and horse types and resources in Landes, Lower Pyrenees, Upper Pyrenees, Gers, and Upper Garonne.

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CONDITIONS OF USE AND MODERN REFINEMENT OF LUBRICATING OILS.
[Conditions d'emploi et raffinage modernes des huiles de graissage.] Captain Chagette

A discussion of the nature of crude oils, desirable characteristics for lubricating oils, and methods of refining.

**January-February 1939**

THE 4TH HUSSARS.
[Le 4e Hussards.]

A brief outline tracing the history of this famous cavalry regiment from its organization in 1743 through the World War.

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FRENCH TEAM IN THE FIRST INTERNATIONAL MILITARY MOTORCYCLE RACE.
[L'équipe de France au premier concours international militaire motocycliste.] Chef d'escadrons Gruss

A description of the participation of the French team in the First International Military Race for Motorcycles held in Belgium 15, 16, 17 July 1938.

The competition was open to all nations, each of which could enter two teams; each motorized Belgian regiment could enter two teams.

Each team consisted of a side car with a driver and officer commanding, one solo motorcycle without passenger, and four side cars each with two passengers.

Machines were required to be regulation in use in various armies, without a special modification. Spare parts, repairs, and replacements were limited to certain specifications; weights were limited to 300 kilograms for solo, 850 for side cars.

The test comprised: First day, 310 miles on roads at minimum, 28 miles per hour; second day, 12 miles across varied rough terrain; third day, driving and handling tests.

The article describes preparation of French team, journey to Belgium, meeting at Spa, the tests on different days, and results.

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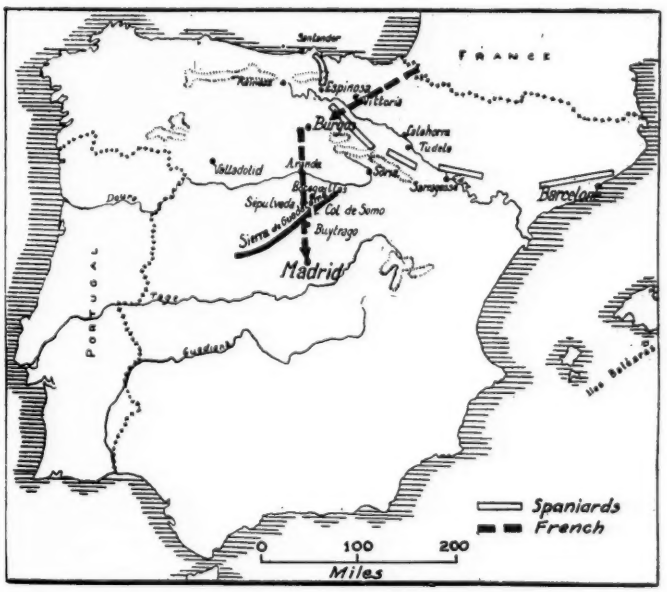
A CONCRETE CASE: SOMO-SIERRA.
[Un cas concret: Somo-Sierra.]

For six months, war in Spain had been in progress. The imperial armies spent themselves in sterile struggle. The resounding checks sustained by Junot and Bupont had roused conquered Europe. Hopes of revenge awoke. French forces were in danger of being swallowed up in the peninsula, and even the prestige of Napoleon was in danger of foundering there. The Emperor understood the danger. The situation had to be corrected at once. Only he could bring victories capable of crushing Spanish resistance and terrorizing the old coalition. He decided to intervene immediately and in person.




SOMA-SIERRA — AN EPISODE OF NAPOLEON'S CAMPAIGN IN SPAIN

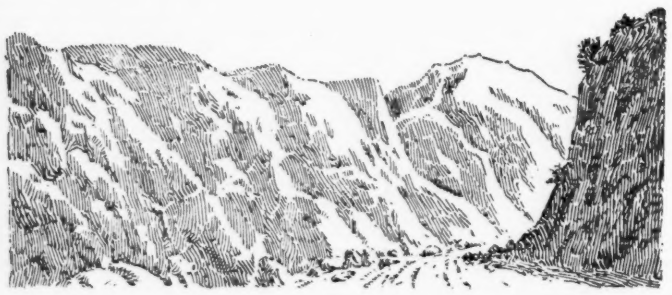
On 1 November he was at Bayonne with the best of his forces. He crossed the Pyrenees, reached Vittoria on the 5th and joined his armies withdrawn north of the Ebre.

Four Spanish armies covered Santander, Burgos, Calahorra, and Saragossa. The Spanish center was weak. Napoleon had already conceived his maneuver: he would fix the right and left with Lefevre and Moncey, and with 80,000 men of the corps of Victor, Soult, Ney, and the cavalry of Bessieres, he would crush the center. He took the offensive immediately, and in three weeks won successes at Espinosa, Burgos, and Tudela. Without delay, he threw Ney on the rear of Castanos by Soria; Lannes with the III Corps on Calahorra, and the I Corps with the Guard on Aranda. It was Madrid, the very heart of Spain, where Napoleon aimed to strike a decisive blow.

The adversary, dismayed by such a sudden change, assembled his forces and marched hastily to the passes of the great wall which, between Douro and the Tage, blocks the road to Madrid: the Guadaramma Mountains.

On the 29th, the situation was as follows: Napoleon reached Aranda, crossed the Douro with the Guard, Victor's Corps, and the reserve of cavalry, and proceeded to the foot of the chain. At noon, he was at Boceguillas with his staff. He took a short rest, then mounted his horse and went to reconnoiter the defile.

He received precise information that the pass of Somo-Sierra was occupied and the terrain organized. 13,000 Spaniards under a remarkable officer, Don Benitos San Juan, had been thrown into the mountains to cover the capital, hardly 50 miles distant. An advance guard of 3,000 men was at Sepulveda. The rest of the force held the Somo-Sierra bottleneck. Infantry in echelons was intrenched in tiers on both flanks, the main part in the bottleneck. Artillery, established on the road itself, was in position on successive terraces. Four batteries of four pieces each, protected by parapets and embrasures, swept the defile for a distance of 2600 yards.



THE TERRAIN FROM VILLAREJO TO SOMO-SIERRA

Coming from Villarejo toward Somo-Sierra, an abrupt wall dominates the valley for over 500 yards. A single break, hardly 880 yards, crosses the Sierra, and this break, like the entrance to a port, is defended by a mole of 1600 yards which extends obliquely from southwest to northeast. A single road follows the ravine, and this road is winding, narrow, strangled between the two cliffs. It climbs steeply, and the heights which surround it are dry, rocky, and covered with brush. The whole resembles an amphitheater 2½ miles long, narrow, and rising to an altitude of 1500 yards. For defense, "It was a blessed position, almost sanctified, and believed invincible."

### MEANS

To open the passage, Napoleon had part of Victor's Corps (Villatte, Ruffin, and Lapisse divisions), cavalry of the Guard, and Latour-Maubourg's cavalry division.

### DECISION

Before this narrow entrance, obstructed and beaten in front and flank by fires of infantry and artillery, Napoleon did not hesitate. He made his decision: by ascending on both flanks, he would make the position fall. He returned to Boceguillas and gave his orders for next day: Lapisse's division was to capture Sepulveda; Ruffin's division, all the slope north of the Guadaramma to the bottleneck; the 9th light would operate to the right, the 24th to the left, the 96th on the road with 6 pieces of artillery in support. The cavalry would hold itself ready to exploit success.

### EXECUTION

The morning of the 30th, Sepulveda was attacked, and was immediately abandoned by the defenders who withdrew toward Segovie. At 9 o'clock, on the road from Somo-Sierra, Victor began his attack. A fog masked movements from the adversary. In the center on the highway, the 96th progressed normally to the bridge, but to the left and right on account of broken rocky terrain and low visibility, the advance of the 9th and 24th was very slow. Victor brought up two pieces of artillery.

About 11:00 o'clock, Napoleon arrived with the Guard cavalry, the light horse leading. The regiment, in column of platoons behind a fold of terrain on the right, was sheltered from cannon but exposed to fire of musketry. The Emperor received precise information from escaped French prisoners and from Major Lejeune, returned from reconnaissance. This information confirmed and completed previous information on the subject of the difficulty of terrain and organization of enemy defense. The fog lifted; Napoleon, nervous, moved toward the bridge on the left of the road, with the Polish 3d Squadron Light Horse and two platoons of Guard Chasseurs, to make a personal reconnaissance of the situation. Glass in hand, he remained under fire, in spite of his staff, and surveyed the horizon.

Before him, the infantry, impeded by terrain and a slashing fire, hesitated, marked time, immobile. Napoleon was impatient with failure of the attack and flew into a rage: Since his infantry was powerless, he would require his cavalry to open the breach across the mountain; without waiting longer, he gave the order to the escort squadron "to advance and capture the position."

Colonel Piré, dismayed at this audacious folly, went forward with his squadron to reconnoiter. After a rapid glance, judging that the position could not be approached from the front, "he stopped the Poles and went to the Emperor:"

"Impossible, Sire!"

At this word, Napoleon replied: "Impossible! Impossible! I do not know that word! What? My Guard stopped by Spaniards, by bands of peasant armies?"

And turning toward Segur: "Go, Segur! Go take the Poles, make them take everything or bring back prisoners!"

Segur departed at the gallop and transmitted to Koxietulski the order to charge at once.

Montbrun intervened in his turn. Piré insisted: "It is impossible!"

"The Emperor does not believe it!"

"Impossible! Then come with me and see if the devil made of fire can stop us!" And Segur turned to the squadron commander: "Forward, the Emperor commands it! To us the honor! Poles forward!"

Kozietulski commanded by fours at the trot, and launched them between the two walls in the assault of the mountain. Behind him a hundred Poles followed, traversed a ditch, cleared a torrent, and scattered stones under horses feet. To left and right, the fusilade rolled. At the first turn was a battery. Kozietulski, wounded, turned the command to Dzienowanski. Men fell, obstructing the passage. An instant, the squadron stopped under fire of musketry, seemed to hesitate, then took its course over the bodies! Lieutenant Krzyanowski fell near the second battery, Captain Dziewanowski near the third. Then suddenly before this hurricane, the batteries ceased, cannoneers fled! The light cavalry continued the ascent, sabering and overthrowing all before them. The moral effect was such that Spanish infantry, itself concealed, sheltered, dug in, abandonned its entrenchments.

When the handful of men who remained mounted reached the summit of the "inaccessible position," they found before their eyes this extraordinary spectacle: the whole Spanish army, throwing down its arms, leaving its baggage and munitions, in flight. The three Polish squadrons that followed were launched in pursuit, in the midst of carriages, caissons and wagons in disorder; and the foot soldiers arrived, guns at sling, singing: "Come! All will be well, comrades!"

Seven minutes had sufficed to open the way to Madrid. The charge in which 57 Poles had been killed or wounded, had delivered 10 flags, 16 cannon, 30 caissons, 200 wagons, and all the colonels of a division. "Extraordinary triumph of speed over immobile fire." Extraordinary triumph of moral over material force.

Since Somo-Sierra, more than a century has passed, but today it can be affirmed that "this brilliant charge should be justly regarded as the most astonishing and the most audacious of which cavalry has furnished an example." General Jomini estimates "that one would certainly not give it, at any time, as a model of tactics and prudence."

Truly, if we content ourselves with a mathematical appreciation of material strength of the adversary, if we make a minute inventory of all that he possesses, if we study the rapidity of fire, if we value the number of shells and bullets that can be fired and received, if we calculate coldly the depth, capacity, and width of his shelters, if we measure the width of the single means of access that permits reaching him, the charge of Somo-Sierra would be judged extravagant, senseless.

Bonaparte, young pupil in school at Brienne, would doubtless have failed in his final examination by taking such a solution! But it is fitting to remember that the highest qualities of a cavalry commander include: "rapidity and surety of glance that sees and recognizes moral dispositions of his own troops and those he attacks; promptness in determination and in action; dash that carries everything before it."

Napoleon knew indeed that for a month Spanish armies had been beaten, that in a month they had retreated 95 miles. Besides, he knew the ascendancy that French cavalry had attained over the adversary (never had any Spanish troop stood before it). Finally, he knew the exceptional bravery of his Poles. Napoleon, therefore, exploited immediately and instinctively, this moral superiority, and his audacious decision assured success.

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ON RE-READING DE BRACK.
[En relisant de Brack.]

A very short extract from de Brack on moral strength in war.

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THE BERRICHON HORSE AND NATIONAL DEFENSE.
[Le cheval berrichon et la défense nationale.] Major Rancourt

A brief study of the geology of Cher and the evolution of its horse breeding since the war, pointing out defects and suggesting remedies from the point of view of national defense.

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OVERSEAS FRANCE. FROM PARIS TO DAKAR BY MOTORCYCLE.
[La France d'outre-mer: de Paris à Dakar à motocyclette.] Captain Couet and Lieutenant Thiriat

A description of preparation for and execution of a motorcycle test from Paris to Dakar, by one of the participants. The author describes preparation for the journey, then execution, giving an itinerary, and comments on difficulties encountered, nature of the terrain, effect on material, defects, and the like.

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ESSAY ON THE EMPLOYMENT OF A CAVALRY SQUADRON OVERSEAS.
[Essai sur l'emploi outre-mer de l'escadron de cavalerie.]

Extracts from an essay of the same title. These extracts comprise a very interesting description of the type of warrior encountered as an adversary in colonial service, his resourcefulness, bravery, and method of fighting.

STUDYING AND DRAWING THE HORSES AND HIS PACES.
[Pour étudier et dessiner le cheval et ses allures.] M. Malespina

An illustrated article by a French artist containing suggestions for studying and sketching horses and action sketches.

## REVUE D'INFANTERIE (France)

BY LIEUTENANT COLONEL E.M. BENITEZ, Coast Artillery Corps

### August 1938

UNVEILING OF THE "BRITANNIA" MONUMENT.
[L'inauguration du monument "Britannia."] Major de l'Epine

The "Britannia" monument in commemoration of the first landing of British troops in France during the World War was unveiled on 19 July 1938. Marshal Pétain was the principal speaker on this occasion.

On 12 August 1914, five infantry divisions and one cavalry division landed at Boulogne. This contingent formed the advance guard of Kitchener's army.

Lord Cavan, in reply to Pétain, said that out of the five million men and women of the British Empire that landed at Boulogne during the Great War, one million never returned while over one million were wounded or became sick. This sacrifice, he said, is a testimony showing to the world that Great Britain knows how to be faithful to friends.

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AUSTRALIA DURING THE WORLD WAR.
[L'Australie pendant la grande guerre et l'inauguration du Mémorial de Villers-Bretonneux.] Major Maunier-Condroyer

An account of Australia's participation in the World War. Her losses were heavy: more than 100,000 Australians were killed (46,000 in France and Flanders and 60,000 in the Near East).

In August 1914, Australia organized the Australian Imperial Force (A.I.F.), sending the 1st Division to Egypt under command of Major General Birdwood.

On 9 November the cruiser "Sidney" sank the "Emden," off Cocos Islands.

In 1915, the Australian and New Zealand Army Corps was organized; it consisted of the 1st and 2d Divisions and one cavalry brigade. In April 1915, this corps landed at Gaba-Tepe, Gallipoli Peninsula, fought grimly at Krithia resisting Turkish counterattacks, and in October participated in the operations at Suvla Bay. When Gallipoli was evacuated 18-19 December, the ANZAC Corps returned to Egypt.

The ANZAC Corps organized the defense of the Suez Canal. In March 1916 it was decided to send it to France.

Two ANZAC Corps were formed: The I Corps under General Birdwood arrived in France in April; the II Corps under General Godley arrived in July. The ANZAC cavalry division remained in Egypt. Thus, Australia contributed a total of 6 divisions, which represents a large force for a sparsely populated country.

Major Condroyer describes the operations of the ANZAC troops on the Western Front in 1916, 1917 and 1918 as well as in the Near East.

The Australian losses during the war were half of the troops mobilized, which shows their intense participation in battle.

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A SOLUTION OF THE MAP PROBLEM GIVEN AT THE ENTRANCE COMPETITION OF THE ECOLE DE GUERRE.
[Une solution au thème tactique proposé au concours d'entrée à l'Ecole supérieure de guerre.] Lieut.Colonel X.

This map problem was given as a test to officers competing for admission to the Ecole de Guerre. There were three requirements:

(1) Orders for the attack issued by the Colonel of the 26th Infantry for the attack.

(2) Requests for artillery fire made by Colonel 26th Infantry, beginning with the time that he received the division order, showing to whom these requests were submitted.

(3) Show the artillery ammunition supply system during the attack of the 26th Infantry; how were the batteries supplied and who issued the necessary orders.

This problem, accompanied by the necessary maps, is discussed in detail.

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TANK VERSUS ANTITANK IN THE BREAKTHROUGH.
[Le char en face de l'arme antichar dans la rupture.] Captain Goutard

The large number of articles written on the above subject show how eager the great military nations are to adopt a policy for the employment of tanks based upon sound doctrines. Any fundamental errors may cause disastrous surprises during the first clashes and may have decisive effects upon the results of the operations.

Three factors are available to military nations to assist them in shaping their tank doctrines:

The experiences of the World War
The post-war evolutions
The lessons of the Spanish War.

The slogan of 1916 was: "Artillery conquers, infantry holds." It was readily shown that while this system might be initially successful, it could not give the final decision.

On 16 April 1917 the French used tanks in battle for the first time. The lessons learned were that wherever tanks could deploy they neutralized effectively the enemy's machine guns; that these results were not lasting unless there was infantry immediately available to exploit the success of the tanks.

The British attack with 360 tanks at Cambrai on 20 November 1917 without artillery preparation showed:

(1) The efficiency of tank attacks in mass over a wide front.
(2) Possibility of effecting a decisive surprise.
(3) Necessity of a fast and powerful exploitation which the imperfect tank of 1917 could not accomplish.

By the end of 1918 it had become evident that two types of tanks were needed: a heavy tank for deep penetration and a light accompanying tank to assist the infantry in the battlefield.

After the war, technical progress was directed toward armament protection and an increase in radius of action.

The independent action of tanks as stated by General Fuller, the British Douhet of tanks, is as follows:

"From the very start of hostilities tanks will disrupt the adversary. In liaison with the air force, it will destroy the vital centers. Attacking the enemy's armies, it will envelop them, attack them in flank and destroy them."

Great efforts have been made in France and in other countries to devise an antitank defense. This defense may be passive, utilizing natural obstacles, erecting artificial obstacles, planting mines, or it may be active—antitank guns, field artillery, aviation.

The Spanish War has shown the failure of the fast, lightly armored tank employed in independent action according to the British ideas, but not the failure of the tank itself.

The results of the antitank defense are: it has not eliminated the breakthrough tank; it has linked the tank to the artillery.

The author discusses at length the German, French and Russian tank doctrines. He concludes that the breakthrough is still the essential part of military operations. Victory requires the closest operation of all arms, particularly of those whose most important mission is to destroy the machine guns that threaten to stop the advancing infantry.

### September 1938

THE TANK COMPANY IN THE APPROACH MARCH. STUDY OF A CONCRETE CASE.
[La compagnie de chars dans l'approche: étude de cas concret.] Major Sudre

An exercise illustrating the missions that may be assigned a tank unit in the approach march. They are three, as follows:

(1) Cooperation with the defense against an enemy mechanized attack against the advance guards while the latter are on the march.

(2) Supporting an advance guard battalion which comes in contact with an enemy in position.

(3) Cooperating in protecting an advance guard against an attack by a hostile mechanized force, when this advance guard comes in contact with an enemy on an offensive mission.

The first two missions are fully covered in this exercise which is illustrated with maps and sketches.

In order to carry out these missions properly, the tank company commander must be well acquainted with the situation and with the intentions of the commander, submitting on time the successive missions that can be carried out by his unit. He must be prepared to meet rapid tank attacks by anticipating proper reconnaissance, and must carry out his orders to further the intention of his commander with zeal and energy. In short, he must be prepared at all times to employ his company so as to save the lives of the infantry.

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THE OFFENSIVE IN POSITION WARFARE, ACCORDING TO LUDENDORFF.
[L'offensive dans la guerre de position d'après Ludendorff.] Major Gervaise

"The attack in a war of movement," wrote Ludendorff, "is the best form of combat, the one that imposes its will upon the adversary and thus produces the greatest success. A great leader will only resort to the defensive when he is confronted with a great numerical enemy superiority or where the terrain makes it possible to compensate for the enemy's inferiority."

Thus Ludendorff always attacked whenever possible. The numerous offensives that he launched on all fronts: Rumanian, Russian, Italian, Anglo-French, gave him an invaluable experience. It is, therefore, interesting to discuss his ideas on position warfare.

Three factors were the basis of his plans: surprise, rapidity and fire.

He visualized surprise in all its forms: strategical surprise, based upon time and space factors; tactical surprise, obtained by unexpected forms of combat; technical surprise, obtained by the employment of new matériel.

Surprise without rapidity can only gain an initial success. "It is not by chance," he said, "that the artist gave wings to Victory." However, surprise and rapidity can do nothing without fire; that is why these three elements are indispensable.

Major Gervaise discusses at length Ludendorff's ideas. The secret of the preparation is in fact the principal factor of surprise. The attack as well as the defense requires an energetic command. The success of the infantry in the offensive depends much less on the number of men employed than on their offensive power gained through rest, training, armament, preparation, ability of the command, rapidity and energetic action.

Contrary to an erroneous opinion, Ludendorff did not use the factor mass. On the contrary, he rejected it; he was opposed to dense formations, which handicapped the attack. His offensive doctrine was based upon intelligence, flexibility, energy, audacity.

At a time when aviation, tanks and motors have given war operations great speed, cadence and violence, the three factors which Ludendorff considered as essential — surprise, rapidity and fire — are more indispensable than ever. Nothing can replace them; their value has been further increased in the offensive, just as depth, invisibility and mobility have maintained their value in the defensive.

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THE INFANTRY OF 1917 AND THE SO-CALLED BATTLES TO RESTORE THE MORALE. VERDUN, 20 AUGUST 1917; LA MALMAISON, 23 OCTOBER 1917.
[L'infanterie de 1917 et les batailles dites à redressement moral. Verdun (20 août 1917). — La Malmaison (23 octobre 1917).] Major Cardot

A discussion of the above named battles, planned in order to show the world the restoration of the French morale which had been badly shaken up after the disastrous Nivelle offensive. Flanders, Verdun and La Malmaison served to restore the confidence of the troops and reestablished discipline in the ranks.

**October 1938**

BAPTISM OF FIRE OF LIGHT TANKS. THE DEFENSE OF THE FOREST OF RETZ, MAY-JULY 1918.
[Le baptême du feu des chars légers: La défense de la forêt de Retz (mai-juillet 1918).] (I) Lieut.Colonel Perré and Lieutenant Suire

"Supposing that the enemy has a superiority of 40 divisions, what quantity of assault tanks will be necessary to offset this superiority?"

In February 1918 the French GHQ announced the principle that, in the attack, 40 divisions with assault tanks were equivalent to 80 divisions without them. This statement was verified in the defensive battle for the forest of Retz.

The authors discuss fully this battle, illustrated by a map, in three phases:

(1) The defense of the approaches to the forest, 29 May-1 June.
(2) The defense at the edges of the forest, 2-14 June.
(4) Disengagement from the forest and seizure of a line of departure with a view to launching a counteroffensive, 15 June-5 July.

It was in the battle at the forest of Retz that the new 6½-ton Renault tank received its baptism of fire. The tanks were organized in battalions of three identical companies each.

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THE 43D SENEGALESE BATTALION IN THE BATTLE OF LA MALMAISON, 23 OCTOBER 1917.
[Le 43e bataillon de Sénégalais dans la bataille de La Malmaison (23 octobre 1917).] Captain Ingold

An account of the action of this battalion, a unit of the 13th Infantry Division, at La Malmaison. In this operation the battalion lost 10 dead, 29 missing, 84 wounded and 103 evacuated.

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THE NEW INFANTRY REGULATIONS.
[Le nouveau règlement d'infanterie.] Captain de Linarès

The new regulations superseding those of 1928, possess two characteristics: precision and simplicity. Bearing in mind the progressive disappearance of those cadres which participated in the World War, it has become necessary to lay down the lessons obtained from that conflict so that they will not be forgotten. In general, simplicity of exposition has been adhered to, because complications and refinements have no place either in peace or in war.

## REVUE MILITAIRE GENERALE (France)

BY MAJOR T.R. PHILLIPS, Coast Artillery Corps

**October 1938**

THE ARGENTINE REPUBLIC AND THE ARGENTINE ARMY.
[La République Argentine et l'Armée argentine.] Colonel von der Becke

The Argentine Republic, like the United States of America, has a population of thirteen million inhabitants almost entirely European from immigration. Only one hundred thousand are natives, or of mixed blood. Nine and one-half million are natives of European blood; three million are European immigrants. Argentine, like the United States, has great power of assimilation, and like the United States, also imprints an original character in time on its immigrants. On account of restrictions imposed on immigration it has lessened recently. Population is primarily of Italian and Spanish extraction, together with a large number of Germans.

The Argentine Army requires about 10% of the governmental budget. The soldiers are conscripted for one year's service. However, conscription is not universal since about twenty-seven thousand are called each year out of an annual class available amounting to one hundred and twenty thousand.

Officers are obtained from the Military College, the Argentine West Point. Admission to the college is by competitive examination. The duration of instruction is five years. Before reaching the grade of captain every officer is required to follow a course of eight months at the school of his arm. At the completion of this course the officers either return to their units or enter the Superior War School. The course at the Superior War School lasts three years. The third year is the General Staff course. Continuation at the school for the third year requires a competitive examination.

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AERIAL BOMBARDMENT AND INDUSTRIAL ORGANIZATION.
[Le bombardement aérien et les principes de l'organisation industrielle.] Camelle Rougeron

Aerial bombardment is a menace to industrial production that cannot be ignored. The adaptation of industrial organization to reduce the effect of bombardment is essential today. War potentiality no longer is the industrial capacity of the country in peace but is represented by the productive capacity of industry while it is being bombarded. There is between one and the other the same difference as between an unarmored cruiser of 120,000 horse power whose speed of 34 knots is diminished by half of the first 8-inch salvo it receives and the ship of the line which, producing its 120,000 horse power under armor of 12 inches only makes 30 knots but is able to sustain this speed for an hour of combat.

The principles of adaptation that need to be applied are distance, dispersion and protection. These are well known and have been used in military art since the most ancient times.

Placing the elements of production at long distances from the base of departure of enemy aviation is the most obvious method of protection. It is also the only one that has been adopted generally. In France it has been recently applied by a requirement that industries of national defense will not build new installations except behind a line several hundred kilometers from its threatened frontiers. England has also adopted this solution and is developing its new factories in the west of the country. Soviet Russia is creating an entire industry in the Urals and Central Asia.

Until recently this solution has been effective but the increase and radius of action of bombardment is making it of less value, particularly in western European countries. However, the chance of success of bombardment diminishes very rapidly. With a distance from 65 to 125 miles from a frontier the bomber can hope to reach his objective by surprise without being intercepted by pursuit aviation. But several hundred miles in the interior of the enemy country, interception is certain and the result of a fight between the bomber and the pursuit is hardly doubtful.

But for most western European countries the solution of distance comes too late. It was acceptable in the state of aviation from 1918 to 1930. The principal advantages of this solution is the fact that the bomber must traverse a great distance of the country attacked. However, methods of navigation permitting flight in darkness and bad weather, together with the approach of bombing speed to that of the pursuit, make it possible to conduct distant bombing missions without too great cost.

Only Soviet Russia has truly understood the military aspect of organization of its key national defense industries. If Great Britain had an equal comprehension it would have developed its new airplane factories in Canada and France would have constructed its airplane industry in Morocco. Britain and France's failure to do this marks an absolute incomprehension of the role of bombardment aviation in modern war.

Dispersion of objectives by deconcentration of establishments of production is the second principle of defense against the aerial menace that has not yet had systematic application. In Russia, for example, they boasted that they had concentrated at Moscow in a single plant their entire production of ball and roller bearings. If this production were hindered, production of automobiles, airplane motors and a quantity of other matters of first military importance would be stopped. One can only say that the concentration of such essential production in a single factory at Moscow is a grave imprudence. In all western European countries there are many examples of essential production concentrated in this fashion. In France in 1937 nine-tenths of the aviation motors were manufactured in two factories in Paris. In Germany, almost all the synthetic gasoline is at the mercy of bombardment of a few factories. In all western European countries, production of explosives takes place in a limited number of plants.

Not all industries can be dispersed but manufacture of airplanes, tanks and automobiles can be carried on economically without enormous plants. Parts can be manufactured or assembled in small factories of from 10 to 50 workers and this applies to a great many military industries.

By protection the author means placing of the vital elements of the factory underground. He believes that most industries can be carried on effectively in a much smaller space than is habitual and gives as an example the building of a ship. However, many industries cannot be protected by such means. He closes by saying that almost all the industries built in later years need to be rebuilt with a view to their adaptation for aerial war and claims that it is one of the most urgent tasks of military organization. Apparently Mr. Rougeron has no faith in the protection supplied by our own aviation and antiaircraft artillery.

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CAVALRY IN THE SPANISH WAR.
[La cavalerie dans la guerre d'Espagne.] General Niessel

The pre-war Spanish cavalry was about 3,500 strong. When the civil war broke out part of the existing regiments broke up or dissolved. Most of the officers and noncommissioned officers arrayed themselves with the Nationalists but many of the troopers were enrolled on the opposite side. The Moorish squadrons formed the nucleus of Franco's cavalry. At the time of the march on Madrid in October 1936, the cavalry for the most part was grouped in a brigade under the orders of Colonel Monasterio. This corps covered the right flank during Franco's operations against Madrid. From 1 October 1936 it included five or six squadrons (troops) with one or

two batteries. It was reinforced later by motorized infantry, particularly after two squadrons suffered heavy losses on 29 October 1936 in combat against a detachment of government tanks. The brigade was behind a line of infantry and believing itself secure, made no effort to defend itself against tanks. One corps of two squadrons marching in column of fours in the village street was attacked by a company of tanks of which several struck from the rear and cut off the retreat. Only scattered individuals succeeded in escaping from that mousetrap.

During the operations in the Jarama Valley in February 1937 some troops of Monasterios' brigade made a mounted attack without artillery preparation but supported by light tanks against a government battery in hastily constructed trenches. The tanks preceded the cavalry into action without acting in close liaison with it. Although several groups of horsemen battered the position, the attack was firmly repulsed with great loss in men and horses. This affair seems to have been the last engagement of the brigade on the Madrid front, as well as the last mounted action.

The Nationalist cavalry and motorized formations operating in liaison with it participated in the operations of 1938 in a role deserving mention, for it was praised in the official communiques of General Franco.

On 6 and 7 February, in the operations to the north and northeast of Teruel in which the mountains to the west of the Valley of the Alfambra fell into possession of the Nationalists, some squadrons made a rapid mounted advance which reached the valley at several points, hastened the disordered government retreat and rapidly seized several villages which they held until the arrival of their infantry.

On the 21st of the same month while a column of all arms occupied the Valley of Turia, a detachment of cavalry, by capturing the village of Castralvo, cut off the retreat of government elements which sought to escape towards the south; this action contributed in bringing about the surrender of the government troops which still held out in Teruel.

But it was above all at the time of the great Nationalist offensive in early March on the entire front from Montalban to Saragossa and further north that Monasterio's cavalry division, which included some motorized units, armored cars and tanks, played an important part. The communique of 11 March described the part taken by the cavalry in attacks in the region of Belchite and extended the congratulations of General Franco for its rapid and decisive advance which assisted in causing the enemy to retreat in great disorder.

Actually, the communique the next day, 12 March, mentioned the arrival of Monasterio's division on the Ebro, more than 19 miles beyond the front pierced at Belchite.

This bold advance greatly facilitated the rapid advance executed a little farther to the south by elements of General Yague's corps which on the 15th reached Caspe on the Ebro to the southeast of Escatron. The progress thus made towards the east reached about 65 miles in five days, with the capture of 8,000 prisoners and considerable matériel. At the same time, Monasterio's division covered, towards the east, preparations for crossing the Ebro at Quinto and Gelso by the main body of General Yague's Corps.

On 23 March, while the extreme Nationalist left debouched from Huesca by surprise, the main body of this army corps (Yague's) accompanied by several squadrons, crossed the Ebro at Quinto and Gilsa, marching on Bujaroloz in order to cut the road from Saragossa to Lerida. The Government front completely turned, gave way to the east of Saragossa. The cavalry preceding General Yague's columns seized on their left Pina on the Ebro, and on the other hand inflicted serious losses upon the Government troops in clearing up, on 24 March and following days, the zone of Los Monegros to the north of Bujaraloz.

At the same time a large detachment of cavalry and motorized troops operated to the east of Caspe in a great bend of the Ebre from which it drove the enemy by seizing Nonaspe and Tayon, which it caused to fall by encirclement, and the heights in the vicinity of these places.

These last important outflanking operations had obtained, besides a successful exploitation of the tactical results of the general offensive, material strategic results. They confirm the conclusions arrived at by M. Svietaier several weeks earlier which we repeat.

It is to be noted that in that battle cavalry employed in small units, suffered only relatively small losses, even though it was exposed to machine-gun fire and airplane bombs. Cavalry did not suffer great losses from aviation or from tanks except when it neglected the indispensable measures of precaution and security.

It was in this manner that Monasterio's Nationalist cavalry brigade suffered very painful losses from the tank action of 29 October 1936, which we have already mentioned. In another instance, of which M. Svietaieu does not give the date, several Moroccan squadrons, surprised in a dense assemblage by several Government airplanes, not having time to disperse, suffered heavy losses.

In summarizing, it would be at least hazardous to conclude from the war in Spain that cavalry is passing into discard on the pretext that aviation and tanks are capable of replacing it.

"When it has been employed intelligently and engaged in a tactically correct manner," said the Soviet officer, "it has plainly shown itself to be a modern arm having great possibilities for use as much in strategic operations as in combat."

This conclusion seems reasonable to me and it will be wise to take it into account.

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THE INTERVENTION OF AVIATION IN THE GROUND BATTLE.

[L'intervention de l'aviation dans la lutte errestre.] General Maginel

Events in Spain have centered attention on the role of combat aviation. Study of air action of the Spanish War has failed to confirm Douhet's theory that aviation could bring about a quick decision. The offensive possibilities of air bombardment seem to have been greatly exaggerated and the power of defense underestimated. Furthermore, unless one side has overwhelming air superiority, belligerents will forego distant attacks through fear of reprisals. As a result, a decision will be sought through a combination of all means. The Spanish War has shown the value of direct intervention with aviation in the ground attack.

Studying the employment of aviation, the advantages and disadvantages are considered with reference to its use in the following zones:

Combat zone
Friendly rear areas
Hostile rear areas.

In the combat zone full value of the possibilities of aviation cannot be obtained because of exposure to penalizing losses. The small arms and antiaircraft fire of both sides are better organized here than elsewhere. The efficiency of air attacks is thus reduced and aviation runs great risk before obtaining applicable results. Action in the combat zone is therefore governed by special tactical considerations, making it exceptional since the mission will often be one of pure sacrifice. A pursuit against a demoralized enemy, however, reverses the situation.

Friendly rear areas formerly were practically safe from air attack. Now they have comparatively few troops and antiaircraft guns. Extremely mobile forces, capable of producing surprise, are required in the defense of such areas. Aviation possesses these characteristics. It can reach a menaced point in half an hour. Even if unable to repulse an attack, aviation at least can delay it until the arrival of ground forces.

It will be normal to push aviation into enemy rear areas since maximum effort may be obtained with minimum losses. Why wait for enemy troops to reach the battlefield when aviation can surprise them in column on the road? In principle, aviation should prolong artillery fire, substituting for it only in special cases.

Due to the development of road systems, the destruction of a section of road or railroad cannot be relied upon to stop movement. Aviation, therefore, only can hope to impose delay. In this case a series of actions will be employed. Strong air forces are required in such an undertaking. In order to escape pursuit aviation the planes to be used must sacrifice carrying power and armament to obtain speed and maneuverability.

The value of aviation in ground attack does not rest entirely in armament but also in the rapidity of entry into action which obtains surprise and affects hostile morale. Temporary control of the air is therefore essential during operations. It would be an error to claim that nothing is to be feared from ground fire, although the greatest danger is hostile aviation. Normally with an adversary in possession of all its combat facilities, willing to fight, aviation will meet with difficulties and will not obtain even partial results without serious losses.

The light bombing plane is the best adapted for ground attack. Observation aviation also may intervene when reconnaissance missions have been completed. In such attacks aviation is auxiliary to the ground forces and must be coordinated closely with other arms.

Observation has become more important than ever. Motorization and armored vehicles have intensified the search for information. Since the enemy moves more rapidly, reconnaissance must be made at a greater distance and more frequently than formerly. Surprise must be avoided.

There should be a single commander for all the forces participating in the combat. This would be either the army commander or the commander of a group of armies. There can be no question whatsoever about the necessity of this unity of command. To obtain the convergence of efforts it is necessary in the same action that all efforts receive a single impulsion. This is a logical principle and the fact that airplanes operate in a third dimension has nothing to do with it. The multiplicity of means supplied by modern tactics makes this law even more imperious today than in the past. Liaison, no matter how well it is provided for, cannot remedy the absence of unity of direction.

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BRIEF ESSAY ON ARMORED UNITS.

[Essai sommaire sur les corps cuirassés.] Captain Grimaux

The French instructions for the tactical employment of large units states that "There have appeared along with large units of normal type new forces (mechanized and motorized) united in large modern units and forming a system capable of carrying on battle by their own means."

The author wishes to develop this system by organizing:

First: Brigades of light cavalry, entirely armored, and for the purpose of seeking information and all-around security of the main body.

Second: Divisions of heavy cavalry, entirely armored.

Third: Corps of motorized infantry of two or three motorized infantry divisions. Each of these will include, besides its present elements, organic accompanying tanks.

This ensemble would be under the orders of a single commander, would be constituted in time of peace and belong to the general reserve. The allotted divisions coming from a distance at night and secretly would thus appear suddenly on the field of battle, accompanied by powerful combat aviation.

The author then examines operations, including the cost of such units, their supply of gasoline, blocking roads, inability of armored vehicles to occupy terrain and the fear that lack of exploitation by infantry will deprive their action of interest.

## REVUE MILITAIRE SUISSE (Switzerland)

By Lieutenant Colonel L.W. Hilliard, Field Artillery — Reserve

### November 1938

Principles of permanent fortifications.
[Principes de fortification permanente.] (I) Colonel Moccetti

This is a short resumé of a broad and timely subject. Permanent fortifications in the countries of western Europe have untold benefits in holding up the morale of the army and the nation. Developments since 1914 have increased the material advantages of such installations. Their defensive strength can scarcely be anticipated until they have been made the subject of a thorough study.

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The nation and the army.
[Nation et armée.] Lieut.Colonel Mayer

The author writes his viewpoints on his observations of the army's relation to the nation it serves. In close association with this is the nation's obligation to its army. With much regret, we must call attention to Colonel Mayer's death in December. He contributed much to the military life in Switzerland. Notice of his death with a short account of his accomplishments will be found on page 619 of the December 1938 issue of "Revue Militaire Suisse."

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Some reflections on discipline and initiative.
[Quelques considérations sur la discipline et l'initiative.] Captain Schlegel

In this article, the author states that we understand the significance of each of these terms and explains the influence of one on the other.

Since initiative is one of the most desirable of qualities of a modern soldier, we must cultivate and develop it in subordinates. When we say initiative, we also mean personality and an appetite for responsibilities. Taken in a general sense, discipline comprises that which we call the spirit to act. In the more limited sense, discipline is military obedience.

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The employment of bicycle units (German opinions).
[Opinions allemandes: L'emploi des unités cyclistes.]

### December 1938

Combat in woods.
[Le combat sous bois.] Colonel Junod

This is an excellent summary of the difficulties encountered where combat is in wooded areas. The author describes the effect of woods on artillery, aviation, use of gas, cavalry, cyclists, tanks, and finally, infantry.

The effect of woods on offensive and defensive actions present varying difficulties. A large part of the success depends on the initiative of small units.

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Principles of permanent fortifications.
[Principes de fortification permanente.] (II) Colonel Moccetti

This is the final installment of an article which appeared in the November issue.

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The Swiss Society of Officers.
[Societé suisse des officiers.]

In the December meeting at Olten, the subject of discussion was "The Problem of High Command." Two resolutions were adopted, the first regarding the problem of high command and the second regarding problems of instruction. Thirty-nine subjects of discussion for the seasons 1939-1940 were brought forth. These included some historical examples and questions covering many military subjects.

## ROYAL AIR FORCE QUARTERLY (Great Britain)

### April 1939

Germany's war potential and her economic system after Munich. Dr. Sternberg

The case for specialized air units equipped, organized and trained as eyes of the air arm

## ROYAL ENGINEERS JOURNAL (Great Britain)

### March 1939

The Rhine-Main-Danube Canal. Major Prokoph

## UNITED SERVICES REVIEW (Great Britain)

### 16 February 1939

Why was Britain ever weak? Air Commodore Charlton

The Aland Islands. Why Germany is interested in their future. Lieut.Colonel Macnamara

### 23 February 1939

A soldier asks some qeustions about the sea. Lieut.Colonel Macnamara

Britain's air force requirements. Air Commodore Charlton

### 2 March 1939

Of what value is Abyssinia to Italy? Air Commodore Charlton

### 9 March 1939

Japan's firm hold of the Dragon's tail. Air Commodore Charlton

### 23 March 1939

A land of promise. Air Commodore Charlton

American politics. Lieut.Colonel Macnamara

### 30 March 1939

The Royal Air Force comes of age. Air Commodore Charlton

Retaining independence in the Baltic. Lieut.Colonel Macnamara

### 6 April 1939

Defence or attack? Air Commodore Charlton

### 13 April 1939

Further notes on the Aland Islands. Air Commodore Charlton

British Merchant Navy: Lifeblood of Empire. Lieut.Commander Talbot-Booth

### 20 April 1939

The citizen and air raid defence. Air Commodore Charlton

Is the horse obsolete? General Franco and cavalry. E.G. Mandeville Roe

## WEHRTECHNISCHE MONATSHEFTE (Germany)

By Lieutenant F. Henriksen, Infantry-Reserve

### August and September 1938

War economy abroad — a comparison.
[Die Wehrwirtschaft des Auslandes — ein Vergleich.] Captain Stark

Summarizing the changes brought about since the World War among the peoples of the earth, the author points out the effects that even a slight disturbance has on the finely woven net of shipping, railways, the telegraph systems, finances, and airways, and makes a detailed study of the defense economics of several countries.

France

Germany's western neighbor's organization of national economics offers interesting points of observation and is characteristic proof that the French never lose sight of their political aim, safeguarding national defense, regardless of internal political constellations. Therefore the thought of defense economy has been completely organized into the French political and economic life. The facility, surety of instinct, and singlemindedness of the French nation knows how to harness economics with the nation's defense system, in spite of administrative difficulties which a parliamentary system entails. Anyone knowing French history and the French soul should not be astonished to find that liberalistic France promulgated a law on 11 August 1936 which nationalized the French armament industry. Furthermore, France today has a well-organized industrial mobilization system which, like the other service branches, is directly under the Supreme War Council under the chairmanship of the President of the Republic.

The strictly military character of the economical mobilization can be gathered from the fact that the entire personnel — executive and technical — has commissioned and noncommissioned grades. These are the so-called assimilés Spéciaux. In the armament industry, for example, the executive has his military rank even in time of peace. The grade earned in the army is entirely independent of the military grade of the war economic system. For instance, a lieutenant of infantry reserve can at the same time be, as a plant superintendent, a captain in the war's economic system. A special school gives the technical training in vocations required in war industries: the "Centre des Préparations aux affaires." Here, specialist officers are trained to meet the problems arising in war industries, as well as students of economics and engineering for the necessary military understanding. These students must earn their commissions as reserve officers of any of the arms and services during the compulsory military service period.

Even more interesting than the matter of personnel is the development of the arms industry upon the completion of the process of nationalization. A short time ago the two greatest arms factories — Hotchkiss, and Schneider Le Creusot — submitted a formal protest to the French authorities.

In addition to the question of which plants are to be nationalized, there arises, naturally, the problem of what reimbursement the owners are to receive. The arms firm "Anciens Etablissements Hotchkiss et Cie," known for its combat cars, was offered 25,000,000,000 francs by the government. Later reports say that this amount was deemed insufficient by the firm. The amounts paid to Schneider for the works at Le Havre, Harfleur, Le Hoc, and La Londe were also considered insufficient and suit has been filed.

It is difficult to evaluate parts of a great industrial enterprise although generalities are known. The loss is to be taken care of on the basis of "inner value" in regard to private company valuation as related to its earnings. Exchange quotations and dividends of the first seven firms give only a vague indication. The great arms firms now seem to feel the reverse side of the hush-hush policy which they planned, fostered, and executed for many years. Schneider's was always known as an enterprise whose financial statements were particularly obscure and which hoarded enormous reserves. Business reports were not published, the dividend policy was so regular that it did not show any fluctuations in business activity. The differences with the French state seem to indicate that the sleeping reserves are even more extensive than was expressed by the exchange.

War Minister Daladier actually decreed the following expropriations:

(1) Manufacture de Machines du Haut-Rhine, Le Mans, ammunition.
(2) Renault, Issy-les-Moulineaux, tanks.
(3) Etablissements Brandt, Chatillon et Vernon, trench mortars, ammunition, fuses.
(4) Ateliers Mécaniques de Normandie, ammunition.
(5) La Pyrotechnie francaise, fuses.
(6) Société Hotchkiss, machine guns, antitank guns.
(7) Schneider, Le Havre — Harfleur — Le Hoc, guns and ammunition; Creusot, guns; St. Priest, gas masks.

### Great Britain

Contrary to France, England's past of free trade plays an important role. The organization of the British war economy is, therefore, a matter of frictionless collaboration between the various components of business and industry and of the various defense forces of the Empire. The "laissez faire — laissez passer" makes itself strongly felt.

For the common solution of all defense questions there exists the Imperial Defense Council with its permanent secretariat directly under the Prime Minister. Numerous sub-committees, in the manner of the English parliamentary system, deal with each important single item of defense and hence with war economy. In 1927 the Imperial Defense College was founded. Here officers of the army, the navy, and of the air force are trained to function on the various aforementioned sub-committees. This college also trains civil officials. The director of the college is appointed for two years and alternates between army, navy, and air force.

Britain's war economy is of threefold interest — the industrial preparation by means of the so-called shadow-industries, the expansion of industry in general over the past four years, and the problem of food supply.

"Shadow-factories" are those plants which are built as a reserve to the arms industry. Some of these plants are fully active, others under construction, and still others planned. On the progress of the shadow industries it is reported that a dozen large aircraft factories are busy today where a year ago there was nothing but bare ground. An army of skilled workers is busy using the latest and most modern machine tools.

"Shadow-industry" has not only come into being, but industrial production of Britain increased enormously in the last four years. A total of 2,688 new factories began production employing about 250,000 people; 250 of these plants were erected in collaboration with foreign firms which came to England to escape the protective tariff. As regards the production of oil from coal, the Conservatives requested the Government to increase oil production from this source because 95% of the oils used in Great Britain must be imported and only 5% of this figure is of Empire production. An actual self-sufficiency of oil through home production is, of course, factually impossible; it is merely a matter of supplementing the needed quantities.

It is clear that an eruptively expanding industry can do so only at the expense of agriculture. Since 1914 the tillable land in Britain has srhunk to 801,000 hectares (3,291,960,870 acres). Only 30% of the sugar consumption is covered by home agriculture, the strongest branch of which is dairying.

The question of British food supply in time of war is not easily solved. Peace time requirements are directly opposite to those of war time. In time of peace, the import of foodstuffs from the dominions and the export of manufactured articles is the basis of British economy. In time of war this is reversed, the country is vitally interested in the greatest possible independence of imports. It is well to remember that in 1917 the wheat reserves shrank at one time to only 14 days' supply.

Two solutions are considered: (1) purchase of huge supplies which are to be held as iron reserves, and (2) increase of home agricultural production. From various sources a demand has been made to accumulate one year's supply of wheat. The objection to this is that the cost would be too great, and that, should the government enter the world market as a purchaser it would tend to disorganize prices, while the dominions would protest against increased home production. It will be interesting to see how England solves this problem.

Britain's resources are immense. The foundation of British world power is its merchant marine. Compared with Germany's it shows as follows: In 1914 Great Britain had approximately 20,000,000 register tons while Germany with the second largest merchant marine had only 5,250,000 tons. This enormous difference of 15,000,000 tons made it impossible for Germany to starve out England! The unrestricted submarine warfare came too late, and Germany did not have the requisite number of undersea craft to make it a success. This superiority made it possible for England, after four years of warfare, to amply supply its fighting forces and civil population. The ratio of British tonnage compared to that of other nations is materially unchanged. With approximately 17½ million tons she still has the largest mercantile fleet in the world. Germany, with gigantic efforts, brought her strength up to 4.2 million tons. In case of war the German merchant fleet would at once be laid up while Britain figures that today, just as in 1914-1918, it would be impossible for Germany to materially decrease British tonnage. Britain would immediately reintroduce the convoy system. She knows from experience that if out of a convoy consisting of a dozen ships, 2 or 3, or even 6, are sunk, 6 will arrive intact and the import of these 6 ships will still be sufficient to, first, adequately supply the armed forces and civil population, and second, in spite of losses to maintain indisputed supremacy on the seas.

### Sweden

Swedish defense economy is well organized. The Staff of Defence Economy heads it.

Sweden's position measures, such as increasing the defense budget by Kr. 80,000,000 to the total of Kr. 148,000,000, and centralizing the high commands of the services, army, navy, and air force, under one common Defense Staff, included the formation of a Defense Economy Staff. The "ordinary members" of this staff are the chiefs of staff of the army, the navy, and the air force, the chiefs of social administration, agricultural administration, and the college of commerce, as well as the Director of the Academy of Engineering Sciences, two government-appointed persons, namely, an industrial expert and a "representative of citizens' interests."

The duties of this staff, among others, are:

(1) To initiate researches on supplies of goods and manpower.

(2) To see that the country's supply of raw materials, fuels, and other industrial supplies are adequate. Herein the Defense Economy Staff acts as the coordinating agency between military and civil authorities and industry.

(3) To prepare the organization of the labor market so that available manpower may be used to the greatest advantage.

(4) In collaboration with the chief of staff of the defense forces, to see that regulations of foreign trade transport system are prepared.

Furthermore, the commission is given a free hand in regard to private enterprise.

It has been proposed to convert Sweden's enormous gold and foreign exchange resources of nearly Kr. 2,000,000,000, at current gold prices, into supply stores. Recommendation has been made for "an expeditious research into the possibilities of building bomb-proof reservoirs for liquid fuels by blasting out rock bottom."

Thus Sweden has primarily an economy of accumulation. Should Sweden become an active participant in a future war she will be well supplied, much in the manner of the medieval fortress.

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In the southern hemisphere, far from the globe's critical point, we find the beginnings of a war economy, as in

### Argentina

The politically leading country of South America. Here an effort is made to nationalize the arms industry on the French model, particularly in the manufacture of aircraft and ammunition.

### Union of South Africa

Defense Minister Pirow announced the erection of an arms factory at Pretoria which will produce heavy guns, combat cars, and ammunition. The construction is to be done by the South African Railways. In time of peace, the plant is to manufacture trucks and only when hostilities have begun will arms be produced. South Africa subsidizes its private arms industry so that it may adequately supply South African needs in case of war.

### Australia

offers an especially characteristic milestone in defense economy because the so-called educational orders have been carried out on a larger scale. It has been known for some time that Australia will not rely on its arms imports from Britain in any future conflict, as she was compelled to do during the World War. Shortly after the war the construction of a government arms industry was begun in which to date 3,500,000 pounds have been invested. With the aid of this industry it is now possible to supply the peace-time needs of army, navy, and air force. The manufacture of 8-inch shells for guns of the cruisers "Canberra" and "Australia" has recently begun, and the manufacture of the 9.2-inch shells for the coast defense batteries is to be accomplished shortly. Although considerable quantities of ammunition are supplied to New Zealand, Australia's new arms industry is not operating to full capacity. Other articles, from lipstick containers to sheep clipping machines are produced. The state-owned arms plants would not be able, however, to supply completely the needs in case of war. For this reason part of the technical staff specializes in the conversion of private industry to wartime needs. At the same time the Australian arms industry expands steadily. The first Australian-made tank was demonstated a short time ago. A new plant will produce the smokless powder cordite, which heretofore had to be imported. Even more comprehensive plans are at present in a state of preparation. The government bought the rights of manufacture of the Bren machine gun from the Czechoslovak government. It is intended, with the expenditure of 250,000 pounds, to build a plant for machine-gun production. This plant is to supply not only Australia, but also New Zealand and South Africa, and possibly the British army base at Singapore. The plans show how Australia aims to be the source of supply for all British forces in the Far East and in the Pacific. Furthermore, great airplane works are in the process of construction. Imperial Chemical Industries of Australia and New Zealand intend to build two factories in Melbourne, at a cost of 300,000 pounds, for the production of gun cotton and ammonia respectively. Australian shipyards, too, have been coordinated in the program of rearmament.

The purely economical agreements of the 1937 London Empire Conference are already bearing fruit. The War Office initiated the introduction of educational orders to Australian private industry. Bids were received to the amount of 100,000 pounds, chiefly for ammunition. In order to receive the greatest possible number of bids the figure is set at 5,000 pieces or more, except for aerial bombs, for which the number is 200 pieces or more. It is especially noteworthy that the bidders are required to inform the War Office as to what help they need in order to erect the necessary appliances to fill the order. They have to inform the War Office of the cost of the needed machine tools. The War Office will then furnish this equipment. The experience gained in government shops is at the disposal of private industry. Australia is, therefore, the first country which has applied the principle of educational orders on a large scale.

**"In each succeeding war there is a tendency to proclaim as something new the principles under which it is conducted. Not only those who have never studied or experienced the realities of war, but also professional soldiers frequently fall into error. But the principles of warfare as I learned them at West Point remain unchanged. They were verified by my experience in our Indian Wars, and also during the campaign against the Spaniards in Cuba. I applied them in the Philippines and observed their application in Manchuria during the Russo-Japanese War."**

PERSHING—*My Experiences in the World War.*

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## LIST OF PERIODICALS INDEXED AND KEY TO ABBREVIATIONS

**A Med Bul** = Army Medical Bulletin
**A Ord** = Army Ordnance
**A Quar** = Army Quarterly (Great Britain)
**Bul Belge Mil** = Bulletin Belge des Sciences Militaires (Belgium)
**Can Def Quar** = Canadian Defence Quarterly (Canada)
**Cav Jour** [GB] = Cavalry Journal (Great Britain)
**Chem War Bul** = Chemical Warfare Bulletin
**CA Jour** = Coast Artillery Journal
**FA Jour** = Field Artillery Journal
**Ftg Forc** = Fighting Forces (Great Britain)
**Inf Jour** = Infantry Journal
**Jour Amer Mil Inst** = Journal of the American Military Institute
**Jour RAMC** = Journal of the Royal Army Medical Corps (Great Britain)
**Jour R Art** = Journal of the Royal Artillery (Great Britain)
**Jour RUSI** = Journal of the Royal United Service Institution (Great Britain)
**Jour USII** = Journal of the United Service Institution of India (Great Britain — India)
**Kraft** = Kraftfahrkampftruppe (Germany)
**Kras** = Krasnaya Zvyezda (Russia)
**MC Gaz** = Marine Corps Gazette
**Mil Mitt** = Militärwissenschaftliche Mitteilungen (Austria)
**Mil-Woch** = Militär-Wochenblatt (Germany)
**Mil Eng** = Military Engineer
**Mil Surg** = Military Surgeon
**Nav Inst Proc** = Naval Institute Proceedings
**Pion** = Pionere (Germany)
**QM Rev** = Quartermaster Review
**Ras Cul Mil** = Rassegna di Cultura Militare (Italy)
**Res Off** = Reserve Officer
**Rv l'Air** = Revue de l'Armée de l'Air (France)
**Rv de Cav** = Revue de Cavalerie (France)
**Rv d'Inf** = Revue d'Infanterie (France)
**Rv Mil Gen** = Revue Militaire Générale (France)
**Rv Mil Suisse** = Revue Militaire Suisse (Switzerland)
**RAF Quar** = Royal Air Force Quarterly (Great Britain)
**Roy Eng Jour** = Royal Engineers Journal (Great Britain)
**US Rev** = United Services Review (Great Britain)
**Wehr Monat** = Wehrtechnische Monatshefte (Germany)

**Jan** = January
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The Rhine-Main-Danube Canal. (Roy Eng Jour — Mar 1939)
Race and war. (Mil Mitt — Oct 1938)
Construction of an 8-ton temporary bridge with floating supports. (Pion — Nov 1938)

*Training*

Schlieffen's tactical-strategic problems. (A Quar — Apr 1939)
German tactical exercise. [See "Foreign Military Digests"]
Conduct of tactical rides. (Mil-Woch — 8 Jul 1938)
Comments on the German march into Sudentenland. (Pion — Nov 1938)

**GREAT BRITAIN (ARMY OF)**

*Auxiliary Military Forces*

War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

*Command and Staff*

Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Statement on British defence. (Can Def Quar — Apr 1939)
War economy abroad — a comparison. (Wehr Monat—Aug & Sep 1938)

*Organization and Equipment*

Anti-tank 1938. (Jour R Art — Apr 1939)
Employment of anti-aircraft units in the forward area. (Jour R Art — Apr 1939)
Anti-tank artillery. (Jour R Art — Apr 1939)
Why was Britain ever weak? (US Rev — 16 Feb 1939)
Britain's air force requirements. (US Rev — 23 Feb 1939)
The Royal Air Force comes of age. (US Rev — 30 Mar 1939)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

*Training*

A.A. barrages. (Ftg Forc — Apr 1939)

**GREAT BRITAIN (NAVY OF)**

A soldier asks some questions about the sea. (US Rev — 23 Feb 1939)
British Merchant Navy: Lifeblood of Empire. (US Rev — 13 Apr 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Strategic problems in the Mediterranean and the Near East. (Mil Mitt — Nov 1938)
Statement on British defence. (Can Def Quar — Apr 1939)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

# H

**HISTORY (NAVAL)**

The importance of studying naval history. (Jour RUSI — Feb 1939)

# I

**INDIANS**

The Indian did not vanish. (QM Rev — Mar-Apr 1939)

**INFANTRY**

*Organization and Equipment*

The tactics of the new infantry regiment. (Inf Jour — Mar-Apr 1939)
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]

*Supply*

Ammunition supply in the new regiment. (Inf Jour — Mar-Apr 1939)

*Training Tactics*

The tactics of the new infantry regiment. (Inf Jour — Mar-Apr 1939)
Lessons in operations and tactics of the Chinese War. [See "Foreign Military Digests"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The regimental reconnaissance platoon. (Bul Belge Mil — Nov 1938)
Reconnaissance in the infantry. (Bul Belge Mil — Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Infantry in hand-to-hand combat. (Kras — 27 Jan 1939)
How we train snipers. (Kras — 1 Feb 1938)
Infantry as an expression of the warlike spirit of the masses. (Mil Mitt — Dec 1938)
Thoughts on motorization. (Mil-Woch — 15 Jul 1938)
Infantry in the attack. (Mil-Woch — 22 Jul 1938)
The infantry of 1917 and the so-called battles to restore the morale. Verdun, 20 August 1917; La Malmaison, 23 October 1917. (Rv d'Inf — Sep 1938)
The 43d Senegalese Battalion in the battle of La Malmaison, 23 October 1917. (Rv d'Inf — Oct 1938)
The new infantry regulations. (Rv d'Inf — Oct 1938)

**INTERNATIONAL RELATIONS**

The Imperial Defence League. (Ftg Forc — Apr 1939)
Strategy in the Mediterranean. (Inf Jour — Mar-Apr 1939)
The United States in world affairs. (Jour R Art — Apr 1939)
Early Russo-Japanese relations. (Nav Inst Proc — Mar 1939)
The Rhine-Main-Danube Canal. (Roy Eng Jour — Mar 1939)
The Aland Islands. Why Germany is interested in their future. (US Rev — 16 Feb 1939)
A land of promise. (US Rev — 23 Mar 1939)
Retaining independence in the Baltic. (US Rev — 30 Mar 1939)
Further notes on the Aland Islands. (US Rev — 13 Apr 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Political and military affairs during the third quarter of 1938. (Mil Mitt — Oct 1938)
The Munich agreement. (Mil Mitt — Nov 1938)
Strategic problems in the Mediterranean and the Near East. (Mil Mitt — Nov 1938)
Finland, the Baltic Sea and Soviet Russia. (Mil Mitt — Dec 1938)
Canada's Commonwealth and foreign policies. (Can Def Quar — Apr 1939)
Statement on British defence. (Can Def Quar — Apr 1939)
The foreign policy of the United States. (Can Def Quar — Apr 1939)

### ITALY (ARMY OF)

Italian gunnery methods. (FA Jour — Mar-Apr 1939)
Of what value is Abyssinia to Italy? (US Rev — 23 Feb 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Strategic problems in the Mediterranean and the Near East. (Mil Mitt — Nov 1938)
Thoughts on motorization. (Mil-Woch — 15 Jul 1938)
Agricultural possibilities in Italian Africa. (Ras Cul Mil — Oct 1938)
The Augustan era. (Ras Cul Mil — Oct 1938)
The march on Rome. (Ras Cul Mil — Nov 1938)
Colonies in Lybia. (Ras Cul Mil — Nov 1938)
The great army experiments of the XVI Year. (Ras Cul Mil — Nov 1938)
A method to determine the occulting power of fog and smoke. (Ras Cul Mil — Nov 1938)
The Nationalist aviation in Bilbao. (Rv l'Air — Oct 1938)

## J

### JAPAN (ARMY OF)

New puppet paradise. (MC Gaz — Mar 1939)
Early Russo-Japanese relations. (Nav Inst Proc — Mar 1939)
Japan's firm hold of the Dragon's tail. (US Rev — 9 Mar 1939)
Lessons in operations and tactics of the Chinese War. [See "Foreign Military Digests"]

### JOINT OPERATIONS

The need for smoke in landing operations. (Chem War Bul — Apr 1939)
The influence of aircraft on land operations. (Jour RUSI — Feb 1939)

## K

KEMAL, Mustapha (1881-1938)

Gazi Mustapha Kemal. (Mil Mitt — Dec 1938)

## L

### LARGE UNITS

The tactical employment of French large units. (Ras Cul Mil — Oct 1938)

#### Corps

French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]

#### Division

French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
The motorized division in a defensive situation. (Ras Cul Mil — Oct 1938)
Antitank defense. (Ras Cul Mil — Oct 1938)
The great army experiments of the XVI Year. (Ras Cul Mil — Nov 1938)

### LAW (MILITARY AND INTERNATIONAL)

The United States in world affairs. (Jour R Art — Apr 1939)

### LEADERSHIP

The Rumanian campaign of 1916. [See "Original Military Study"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)
General Pullet. (Pion — Nov 1938)
Leaders win where commanders lose. (Can Def Quar — Apr 1939)
Reflections on strategy during the World War. (Ras Cul Mil — Oct, Dec 1939)
Ludendorff. (Ras Cul Mil — Dec 1938)
A concrete case: Somo-Sierra. (Rv de Cav — Jan-Feb 1939)

### LIAISON

The cavalry-artillery team. (FA Jour — Mar-Apr 1939)
The influence of aircraft on land operations. (Jour RUSI — Feb 1939)
Cooperation between the navy and aviation. (MC Gaz — Mar 1939)
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Cooperation of artillery and pursuit aviation. (Kras — 15 Feb 1939)
Fire direction and assignment of objectives to the artillery. (Mil-Woch — 1 Jul 1938)
The tactical employment of French large units. Ras Cul Mil — Oct 1938)

LUDENDORFF, General Erich (1865-1937)

Ludendorff. (Ras Cul Mil — Dec 1938)

## M

MACKENSEN, Field Marshal August von (1849- )

The Rumanian campaign of 1916. [See "Original Military Study"]

### MANEUVERS

Medical Department lessons from the Fourth Army Maneuvers, 1937. (Mil Surg — Mar 1939)
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Overseas air maneuvers. (Rv l'Air — Sep 1938)

### MAP PROBLEMS

German tactical exercise. [See "Foreign Military Digests"]
A solution of the map problem given at the entrance competition of the Ecole de Guerre. (Rv d'Inf — Aug 1938)
The tank company in the approach march. (Rv d'Inf — Sep 1938)

### MARCHES

2000 miles through the Rockies. (FA Jour — Mar-Apr 1939)
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Reconnaissance in the infantry. (Bul Belge Mil — Dec 1938)
Special features of a mountain march. (Kras — 8 Mar 1939)
March of motorized units in close proximity to the enemy. (Mil-Woch — 22 Jul 1938)
Comments on the German march into Sudentenland. (Mil-Woch — Nov 1938)
The tank company in the approach march. (Rv d'Inf — Sep 1938)

### MARINE CORPS

Merchant ships and national defense. (MC Gaz — Mar 1939)

### MARKSMANSHIP

Fire and movement. (Mil Mitt — Nov 1938)
Light rays instead of ammunition for target practice. (Mil Mitt — Nov 1938)

### MECHANIZATION

Brief essay on armored units. (Rv Mil Gen — Oct 1938)
French views on modern cavalry. (Cav Jour [GB] — Jan 1939)
Some more thoughts on mechanisation. (Cav Jour [GB] — Apr 1939)
Lessons in operations and tactics of the Chinese War. [See "Foreign Military Digests"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
The tactical employment of French large units. (Ras Cul Mil — Oct 1938)

### MEDICAL SERVICE

Observations on the Medical Department of the Japanese North China Expeditionary Force. (A Med Bul — Jan 1939)
An account of the annual training of a cavalry field ambulance (1938). (Jour RAMC — Apr 1939)
A suggestion for modification of the advanced dressing station. (Jour RAMC — Apr 1939)
Medical Department lessons from the Fourth Army Maneuvers, 1937. (Mil Surg — Mar 1939)
Is America physically fit to go to war? (Mil Surg — Apr 1939)
The Veterans' Administration in national defense. (Mil Surg — May 1939)
Notes on the Civilian Conservation Corps of interest to the physician. (Mil Surg — May 1939)
Formation and organization of the medical officers in the Belgian army. (Bul Belge Mil — Nov 1938)

### MEDITERRANEAN SEA

Strategy in the Mediterranean. (Inf Jour — Mar-Apr 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Strategic problems in the Mediterranean and the Near East. (Mil Mitt — Nov 1938)

### MEETING ENGAGEMENTS

Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Reconnaissance and artillery action in a meeting engagement. (Mil-Woch — 8 Jul 1938)

### METEOROLOGY

Overseas air maneuvers. (Rv l'Air — Sep 1938)

### MOBILITY

French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Reserve artillery in defense. (Kras — 11 Feb 1939)
Reflections on strategy during the World War. (Ras Cul Mil — Oct, Dec 1938)

### MOBILIZATION

#### Industrial Mobilization

Germany's economic mobilization. (A Quar — Apr 1939)
The industrial mobilization plan. (Chem War Bul — Apr 1939)

### MOTORIZATION

Cavalry in the Spanish War. (Rv Mil Gen — Oct 1938)
Brief essay on armored units. (Rv Mil Gen — Oct 1938)
French views on modern cavalry. (Cav Jour [GB] — Jan 1939)
2000 miles through the Rockies. (FA Jour — Mar-Apr 1939)
Mars motors east. (QM Rev — Mar-Apr 1939)
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Thoughts on the new Italian "Binary" infantry division. [See "Foreign Military Digests"]
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Lessons from the Spanish War. (Mil Mitt — Oct 1938)
Truck driving in mountainous country. (Mil Mitt — Oct 1938)
Thoughts on motorization. (Mil-Woch — 15 Jul 1938)
March of motorized units in close proximity to the enemy. (Mil-Woch — 22 Jul 1938)
The motorized division in a defensive situation. (Ras Cul Mil — Oct 1938)
The great army experiments of the XVI Year. (Ras Cul Mil — Nov 1938)
French team in the First International Military Motorcycle Race. (Rv de Cav — Jan-Feb 1939)
Overseas France. From Paris to Dakar by motorcycle. (Rv de Cav — Jan-Feb 1939)

## N

### NATIONAL DEFENSE

Aerial bombardment and industrial organization. (Rv Mil Gen — Oct 1938)
The effect of the world struggle for raw materials on national defense. (A Med Bul — Jan 1939)
The President's defense message. (A Ord — Mar-Apr 1939)
Principles of permanent fortifications. (Rv Mil Suisse — Nov, Dec 1938)
Fundamentals of preparedness. (A Ord — May-Jun 1939)
The chemist as defender of his Fatherland. (Chem War Bul — Apr 1939)
The Imperial Defence League. (Ftg Forc — Apr 1939)
Merchant ships and national defense. (MC Gaz — Mar 1939)
Population changes and the national defense. (Mil Eng — Mar-Apr 1939)
The Veterans' Administration in national defense. (Mil Surg — May 1939)
Defense problems and the Reserve Corps. (Res Off — Mar 1939)
Retaining independence in the Baltic. (US Rev — 30 Mar 1939)
The citizen and air raid defence. (US Rev — 20 Apr 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Canada's Commonwealth and foreign policies. (Can Def Quar — Apr 1939)
Statement on British defence. (Can Def Quar — Apr 1939)
The foreign policy of the United States. (Can Def Quar — Apr 1939)
The Berrichon horse and national defense. (Rv de Cav — Jan-Feb 1939)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

### NAVAL WARFARE

The importance of studying naval history. (Jour RUSI — Feb 1939)
Cooperation between the navy and aviation. (MC Gaz — Mar 1939)
The development of war gases and the navy. (Nav Inst Proc — Mar 1939)

## O

### OBSTACLES

Pillboxes. (Mil Mitt — Dec 1938)

### OIL

Conditions of use and modern refinement of lubricating oils. (Rv de Cav — Nov-Dec 1938)

### ORDNANCE

The President's defense message. (A Ord — Mar-Apr 1939)
Artillery ammunition production. (A Ord — Mar-Apr 1939)
Fundamentals of preparedness. (A Ord — May-Jun 1939)
The 75-mm gun. (A Ord — May-Jun 1939)

## P

### POPULATION

Population changes and the national defense. (Mil Eng — Mar-Apr 1939)

### POSITION WARFARE

The offensive in position warfare, according to Ludendorff. (Rv d'Inf — Sep 1938)

PULLET, General (1787-1822)

General Pullet. (Pion — Nov 1938)

## Q

### QUARTERMASTER SERVICE

The army and industry. (QM Rev — Mar-Apr 1939)

# R

### RAIDS

Raids and counter raids: As seen from both sides. (Cav Jour [GB] — Jan 1939)
The citizen and air raid defence. (US Rev — 20 Apr 1939)

### RECONNAISSANCE

Anti-tank 1938. (Jour R Art — Apr 1939)
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The regimental reconnaissance platoon. (Bul Belge Mil — Nov 1938)
Reconnaissance in the infantry. (Bul Belge Mil — Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Reconnaissance and artillery action in a meeting engagement. (Mil-Woch — 8 Jul 1938)
March of motorized units in close proximity to the enemy. (Mil-Woch — 22 Jul 1938)

### RIVER CROSSINGS

The Serbian campaign of 1915 — Capture of Belgrade (river crossings). [See "Foreign Military Digests"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Wartenburg — 3 October 1813. (Pion — Nov 1938)

### ROUTES COMMUNICATIONS

#### Bridges Bridging

Construction of an 8-ton temporary bridge with floating supports. (Pion — Nov 1938)

#### Highways Military Roads

Mars motors east. (QM Rev — Mar-Apr 1939)

#### Waterways

Strategy in the Mediterranean. (Inf Jour — Mar-Apr 1939)
The Rhine-Main-Danube Canal. (Roy Eng Jour — Mar 1939)
Strategical doctrine in the Mediterranean. [See "Foreign Military Digests"]
Strategic problems in the Mediterranean and the Near East. (Mil Mitt — Nov 1938)

### RUMANIA (ARMY OF)

The Rumanian campaign of 1916. [See "Original Military Study"]

### RUSSIA (ARMY OF)

Aerial bombardment and industrial organization. (Rv Mil Gen — Oct 1938)
Early Russo-Japanese relations. (Nav Inst Proc — Mar 1939)
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Infantry in hand-to-hand combat. (Kras — 27 Jan 1939)
Training of the staffs of units. (Kras — 29 Jan 1939)
How we train snipers. (Kras — 1 Feb 1939)
Experience in field staff training. (Kras — 4 Feb 1939)
Individual entrenching in the snow. (Kras — 9 Feb 1939)
Tactical training of a signal officer. (Kras — 12 Feb 1939)
Fighting planes in group aerial combat. (Kras — 20 Feb 1939)
Red Army's new cavalry drill regulations. (Kras — 27 Feb 1939)
Correction of fire from the tank. (Kras — 1 Mar 1939)
Finland, the Baltic Sea and Soviet Russia. (Mil Mitt — Dec 1938)

# S

### SIGNAL SERVICE

Tactical training of a signal officer. (Kras — 12 Feb 1939)
Electro-optical accessories for observation in fog and at night. (Mil Mitt — Oct 1938)

### SUPPLY

The effect of the world struggle for raw materials on national defense. (A Med Bul — Jan 1939)
The Air Force spreads its wings. (A Ord — Mar-Apr 1939)
Conditions of use and modern refinement of lubricating oils. (Rv de Cav — Nov-Dec 1938)
Germany's economic mobilization. (A Quar — Apr 1939)
The industrial mobilization plan. (Chem War Bul — Apr 1939)
Ammunition supply in the new regiment. (Inf Jour — Mar-Apr 1939)
Military contributions during the eighteenth century. (Jour Amer Mil Inst — Spring, 1939)
The influence of aircraft on land operations. (Jour RUSI — Feb 1939)
Strategic mineral supplies in Germany. (Mil Eng — Mar-Apr 1939)
The present status of manganese. (Mil Eng — May-Jun 1939)
Germany's war potential and her economic system after Munich. (RAF Quar — Apr 1939)
A land of promise. (US Rev — 23 Mar 1939)
Agricultural possibilities in Italian Africa. (Ras Cul Mil — Oct 1938)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

### SURPRISE

Surprise in defence. (Ftg Forc — Apr 1939)
The campaign of surprise: Bonaparte in Italy. (Inf Jour — Mar-Apr 1939)
The offensive in position warfare, according to Ludendorff. (Rv d'Inf — Sep 1938)

### SWEDEN (ARMY OF)

War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

### SWITZERLAND (ARMY OF)

The nation and the army. (Rv Mil Suisse — Nov 1938)
The Swiss Society of Officers. (Rv Mil Suisse — Dec 1938)

# T

### TACTICAL RIDES

Conduct of tactical rides. (Mil-Woch — 8 Jul 1938)

### TACTICS OPERATIONS

#### Defensive Combat

Combat in woods. (Rv Mil Suisse — Dec 1938)
Surprise in defence. (Ftg Forc — Apr 1939)
Anti-tank 1938. (Jour R Art — Apr 1939)
Anti-tank artillery. (Jour R Art — Apr 1939)
Defence or attack? (US Rev — 6 Apr 1939)
The Rumanian campaign of 1916. [See "Original Military Study"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)
Reconnaissance in the infantry. (Bul Belge Mil — Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Reserve artillery in defense. (Kras — 11 Feb 1939)
Regimental attack in narrow sector of the front. (Kras — 6 Mar 1939)
Fire direction and assignment of objectives to the artillery. (Mil-Woch — 1 Jul 1938)
The tactical employment of French large units. (Ras Cul Mil — Oct 1938)
The motorized division in a defensive situation. (Ras Cul Mil — Oct 1938)
Antitank defense. (Ras Cul Mil — Oct 1938)
Baptism of fire of light tanks. The defense of the Forest of Retz, May-July 1918. (Rv d'Inf — Oct 1938)

#### Offensive Combat

Combat in woods. (Rv Mil Suisse — Dec 1938)
Anti-tank 1938. (Jour R Art — Apr 1939)
The influence of aircraft on land operations. (Jour RUSI — Feb 1939)
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French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Reconnaissance in the infantry. (Bul Belge Mil — Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Regimental attack in narrow sector of the front. (Kras — 6 Mar 1939)
Fire direction and assignment of objectives to the artillery. (Mil-Woch — 1 Jul 1938)
Reconnaissance and artillery action in a meeting engagement. (Mil-Woch — 8 Jul 1938)
Halt in the attack and how to prevent it. (Mil-Woch — 15 Jul 1938)
Infantry in the attack. (Mil-Woch — 22 Jul 1938)
The tactical employment of French large units. (Ras Cul Mil — Oct 1938)
The tank company in the approach march. (Rv d'Inf — Sep 1938)
The offensive in position warfare, according to Ludendorff. (Rv d'Inf — Sep 1938)

#### Protective and Defensive Measures

Notes on camouflage testing in Texas. (Mil Eng — Mar-Apr 1939)

#### Special Warfare

Combat in woods. (Rv Mil Suisse — Dec 1938)
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Special features of a mountain march. (Kras — 8 Mar 1939)

### TANKS

Brief essay on armored units. (Rv Mil Gen — Oct 1938)
"The Modern Army." (A Ord — Mar-Apr 1939)
Some more thoughts on mechanisation. (Cav Jour [GB] — Apr 1939)
Anti-tank 1938. (Jour R Art — Apr 1939)
Anti-tank artillery. (Jour R Art — Apr 1939)
Lessons in operations and tactics of the Chinese War. [See "Foreign Military Digests"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
Tank's predecessors. (Bul Belge Mil — Dec 1938)
Motorization of the arms in foreign armies. (Kraft — Oct 1938)
Crossing of tanks and artillery on reinforced ice. (Kras — 21 Feb 1939)
Correction of fire from the tank. (Kras — 1 Mar 1939)
Pillboxes. (Mil Mitt — Dec 1938)
Halt in the attack and how to prevent it. (Mil-Woch — 15 Jul 1938)
Thoughts on motorization. (Mil-Woch — 15 Jul 1938)
Antitank defense. (Ras Cul Mil — Oct 1938)
The Nationalist aviation in Bilbao. (Rv l'Air — Oct 1938)
Tank versus antitank in the breakthrough. (Rv d'Inf — Aug 1938)
The tank company in the approach march. (Rv d'Inf — Sep 1938)
Baptism of fire of light tanks. The defense of the Forest of Retz, May-July 1918. (Rv d'Inf — Oct 1938)

### TRANSPORTATION

The influence of aircraft on land operations. (Jour RUSI — Feb 1939)
Mars motors east. (QM Rev — Mar-Apr 1939)
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The origin of the Inter-Allied Motor Transport Pool during the World War, 1914-1918. (Bul Belge Mil — Dec 1938)
Truck driving in mountainous country. (Mil Mitt — Oct 1938)

# U

### UKRANIA

A land of promise. (US Rev — 23 Mar 1939)

### UNITED STATES

American politics. (US Rev — 23 Mar 1939)

### UNITED STATES (ARMY OF)

#### Auxiliary Military Forces

Defense problems and the Reserve Corps. (Res Off — Mar 1939)

#### Command and Staff

The United States in world affairs. (Jour R Art — Apr 1939)
The army and industry. (QM Rev — Mar-Apr 1939)
The foreign policy of the United States. (Can Def Quar — Apr 1939)

#### Organization and Equipment

Fundamentals of preparedness. (A Ord — May-Jun 1939)
The Army of the United States. (Res Off — Apr 1939)

#### Training

Is America physically fit to go to war? (Mil Surg — Apr 1939)

### UNITED STATES (NAVY OF)

#### Auxiliary Naval Forces

Merchant ship and national defense. (MC Gaz — Mar 1939)
A Merchant Marine Naval Reserve. (Nav Inst Proc — Apr 1939)
The value of CCC duty to reserve officers. (Nav Inst Proc — Apr 1939)

#### Organization and Equipment

An organization for the United States Fleet. (Nav Inst Proc — May 1939)

# V

### VEHICLES

Tanks in antiquity. (Rv de Cav — Nov-Dec 1938)

### VETERANS' ADMINISTRATION

The Veterans' Administration in national defense. (Mil Surg — May 1939)

# W

### WAR PEACE

The effect of the world struggle for raw materials on national defense. (A Med Bul — Jan 1939)
The nation and the army. (Rv Mil Suisse — Nov 1938)
The United States in world affairs. (Jour R Art — Apr 1939)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep — 1938)

### WARS

AFRICA

#### ITALY-ABYSSINIA (1935-1936)

Italo-Abyssinian War. (Jour USII — Jan 1939)

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#### JAPAN-CHINA (1930- )

Observations on the Medical Department of the Japanese North China Expeditionary Force. (A Med Bul — Jan 1939)
Japan's firm hold of the Dragon's tail. (US Rev — 9 Mar 1939)
Lessons in operations and tactics of the Chinese War. [See "Foreign Military Digests"]
The action on the Hwang-Ho. (Kras — 3 Mar 1939)
The Sino-Japanese War. (Mil Mitt — Oct 1938)

EUROPE

#### NAPOLEONIC WARS (1795-1815)

The campaign of surprise: Bonaparte in Italy. (Inf Jour — Mar-Apr 1939)
General Pullet. (Pion — Nov 1938)
Engineers and fortresses in the Napoleonic era. (Pion — Nov 1938)
Wartenburg — 3 October 1813. (Pion — Nov 1938)
A concrete case: Somo-Sierra. (Rv de Cav — Jan-Feb 1939)

#### RUSSIA-POLAND (1920)

Battle on the Vistula. (Jour Amer Mil Inst — Spring, 1939)

### SPANISH CIVIL WAR (1936-1939)

Cavalry in the Spanish War. (Rv Mil Gen — Oct 1938)
The intervention of aviation in the ground battle. (Rv Mil Gen — Oct 1938)
Proving ground in Spain. (A Ord — May-Jun 1939)
Climax in Catalonia. (Inf Jour — Mar-Apr 1939)
The Spanish Civil War. (Jour RUSI — Feb 1939)
War without gold — The Mystery of "Rebel" Finance. (Mil Eng — May-Jun 1939)
Is the horse obsolete? General Franco and cavalry. (US Rev — 20 Apr 1939)
Simplest forms of field fortifications. (Kras — 3 Feb 1939)
Combat operations by bombing planes. (Kras — 10 Feb 1939)
Reserve artillery in defense. (Kras — 11 Feb 1939)
Lessons from the Spanish War. (Mil Mitt — Oct 1938)
The Civil War in Spain. (Mil Mitt — Nov 1938)
The Nationalist aviation in Bilbao. (Rv l'Air — Oct 1938)

## UNITED STATES

### CIVIL WAR (1861-1865)

Policy and command in the American Civil War, 1864-1865. (A Quar — Apr 1939)
Jackson's Fredericksburg tactics. (Jour Amer Mil Inst — Spring, 1939)

## WORLD WAR (1914-1918)

### E — General Military History

Unveiling of the "Britannia" monument. (Rv d'Inf — Aug 1938)

### G — Arms and Services

ENGINEERS

The Serbian campaign of 1915 — Capture of Belgrade (river crossings). [See "Foreign Military Digests"]
Railway demolition by aircraft in Volhymia. (Pion — Nov 1938)
Comments on the employment of permanent fortifications. (Ras Cul Mil — Dec 1938)

INFANTRY

The infantry of 1917 and the so-called battles to restore the morale. Verdun, 20 August 1917; La Malmaison, 23 October 1917. (Rv d'Inf — Sep 1938)
The 43d Senegalese Battalion in the battle of La malmaison, 23 October 1917. (Rv d'Inf — Oct 1938)

TANKS

Tank versus antitank in the breakthrough. (Rv d'Inf — Aug 1938)
Baptism of fire of light tanks. The defense of the Forest of Retz, May-July 1918. (Rv d'Inf — Oct 1938)

### H — Military Conduct of the War in the Field

"The Other Side of the Hill." No. XVII. Battle of Arras: 9th of April, 1917. (A Quar — Apr 1939)
Raids and counter raids: As seen from both sides. (Cav Jour [GB] — Jan 1939)
Surprise in defence. (Ftg Forc — Apr 1939)
"Discuss the dictum that the size of modern armies has rendered strategy wholly subordinate to tactics." (Jour USII — Jan 1939)
The Rumanian campaign of 1916. [See "Original Military Study"]
The Serbian campaign of 1915 — Capture of Belgrade (river crossing). [See "Foreign Military Digests"]
The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)
The origin of the Inter-Allied Motor Transport Pool during the World War, 1914-1918. (Bul Belge Mil — Dec 1938)
Gazi Mustapha Kemal. (Mil Mitt — Dec 1938)
Reflections on strategy during the World War. (Ras Cul Mil — Oct, Dec 1938)
The Battle of Italy (Vittorio Veneto — 24 October-4 November 1918). (Ras Cul Mil — Nov 1938)
Study on the strategy of the World War (Austrian Plan). (Ras Cul Mil — Nov 1938)
Ludendorff. (Ras Cul Mil — Dec 1938)
Australia during the World War. (Rv d'Inf — Aug 1938)
The offensive in position warfare, according to Ludendorff. (Rv d'Inf — Sep 1938)

### J — Campaigns and Battles

ASIATIC AREA — TURKISH THEATER

Dardanelles (Gallipoli) Front

Australia during the World War. (Rv d'Inf — Aug 1938)

EUROPEAN AREA — BALKAN THEATER

Rumanian Front

The Rumanian campaign of 1916. [See "Original Military Study"]

Serbian Front

The Serbian campaign of 1915 — Capture of Belgrade (river crossings). [See "Foreign Military Digests"]
Study on the strategy of the World War (Austrian Plan). (Ras Cul Mil — Nov 1938)

EUROPEAN AREA — ITALIAN THEATER

The Battle of Italy (Vittorio Veneto — 24 October-4 November 1918). (Ras Cul Mil — Nov 1938)

EUROPEAN AREA — RUSSIAN THEATER

The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)
Reflections on strategy during the World War. (Ras Cul Mil — Oct, Dec 1938)

EUROPEAN AREA — WESTERN THEATER

"Discuss the dictum that the size of modern armies has rendered strategy wholly subordinate to tactics." (Jour USII — Jan 1939)
Australia during the World War. (Rv d'Inf — Aug 1938)

1917

"The Other Side of the Hill." No. XVII. Battle of Arras: 9th of April, 1917. (A Quar — Apr 1939)
Raids and counter raids: As seen from both sides. (Cav Jour [GB] — Jan 1939)
The infantry of 1917 and the so-called battles to restore the morale. Verdun, 20 August 1917; La Malmaison, 23 October 1917. (Rv d'Inf — Sep 1938)
The 43d Senegalese Battalion in the battle of La Malmaison, 23 October 1917. (Rv d'Inf — Oct 1938)

1918

In defense of antiaircraft. (A Ord — Mar-Apr 1939)
Surprise in defence. (Ftg Forc — Apr 1939)
Scope and terrain of the German and opposing plans of operations during the spring of 1918. (Mil-Woch — 22 Jul 1938)
Baptism of fire of light tanks. The defense of the Forest of Retz, May-July 1918. (Rv d'Inf — Oct 1938)

### WEAPONS

Proving ground in Spain. (A Ord — May-Jun 1939)
The 75-mm gun. (A Ord — May-Jun 1939)
The role of AA artillery. (CA Jour — Mar-Apr 1939)
Anti-tank 1938. (Jour R Art — Apr 1939)
Anti-tank artillery. (Jour R Art — Apr 1939)
Infantry in the attack. (Mil-Woch — 22 Jul 1938)
Utilize the power of the armored car weapons. (Mil-Woch — 22 Jul 1938)
Antitank defense. (Ras Cul Mil — Oct 1938)
Aviation cannon. (Rv l'Air — Oct 1938)
War economy abroad — a comparison. (Wehr Monat — Aug & Sep 1938)

### WITHDRAWAL

Anti-tank 1938. (Jour R Art — Apr 1939)
Anti-tank artillery. (Jour R Art — Apr 1939)
The Rumanian campaign of 1916. [See "Original Military Study"]
French principles for the employment of mechanized and motorized units and the defense against these units. [See "Foreign Military Digests"]
Russian principles for the employment of tanks and mechanized units and the defense against these units. [See "Foreign Military Digests"]
The War of 1914-1918 on the Russian Front. (Bul Belge Mil — Oct, Nov, Dec 1938)

**"In the final analysis, infantry and artillery, with their feet in the mud, will win the battle."**

—*Major General Hugh A. Drum.* From an address to the Indiana National Guard Association.

## HINTS ON SOLVING PROBLEMS

It is believed that the careful observance of the following points in the solution of map problems may be of benefit to officers attending Service Schools or taking Correspondence Courses:

1. Study the situation and requirements carefully. Look for your *mission* and keep it in mind. A correct conception of the mission is the first requisite.

2. An estimate of the situation should be made in all problems which require a decision.

3. Always in arriving at your decision remember the four words: *what, where, when,* and *how.* These interrogations are guides to a complete decision.

Try not to "fight the problem" or waste time in criticizing it. No perfect problem has ever been produced. Our present system is the best that we can devise. It represents years of experience and is the product of some of our best military minds. Try to accept the problem as it is presented to you. Remember that any situation presented, even though apparently illogical, is more logical than many that have been found in actual war.

4. Stake out the problem on your map carefully. After it is staked out, reread it, following the map. Errors through careless reading of problems are often made.

5. After staking out the problem, examine the set-up in perspective. Often an examination of the general set-up will prevent erroneous decisions which may result from the omission of this precaution.

A correct appreciation of all terrain features which may have a bearing on your problem is essential. The nature of the terrain always has a determining influence on tactical plans. Failure to study the map or the actual terrain always proves costly.

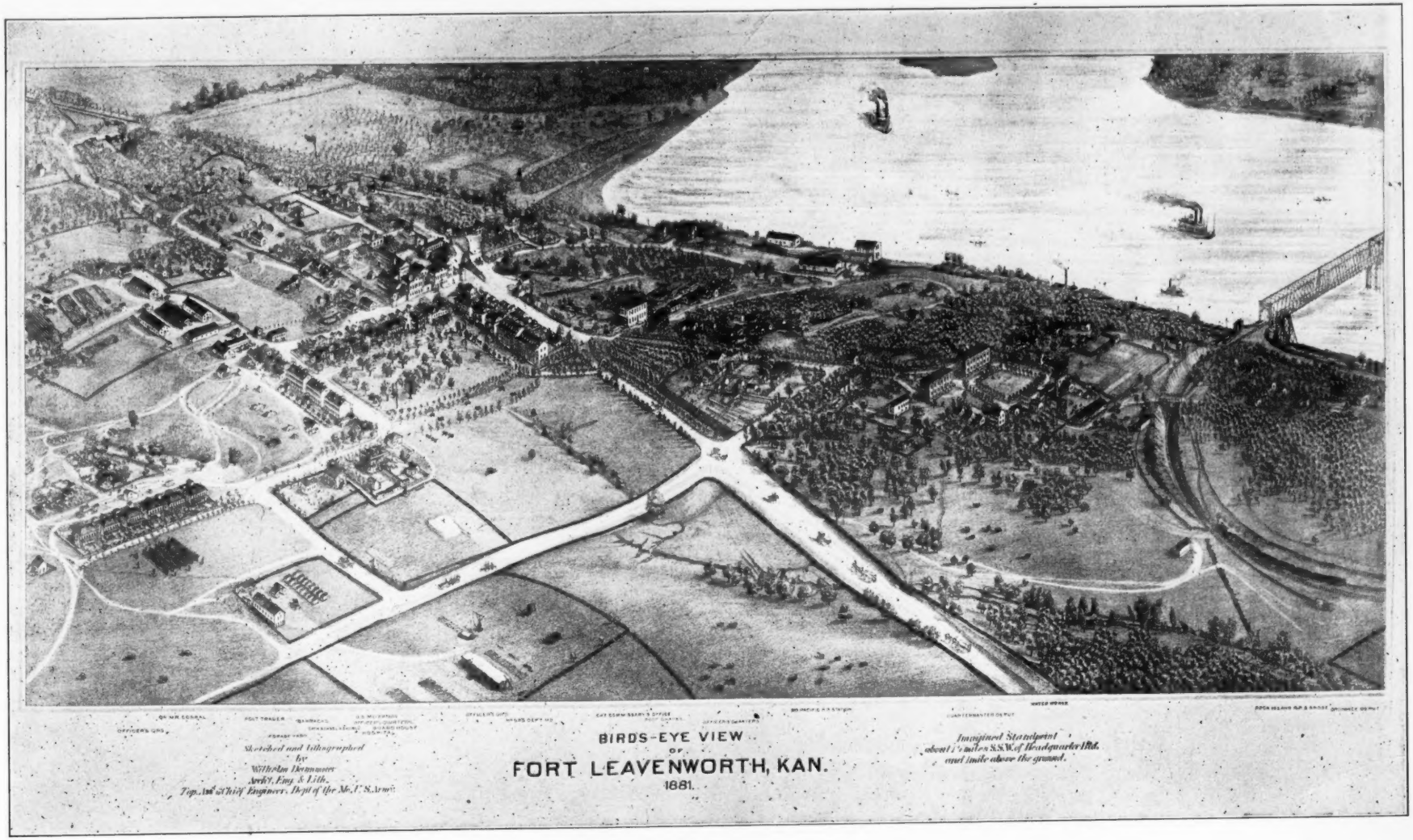
6. Do not fail to consider the time and space elements carefully. They vitally affect every problem. Nor should weather conditions be overlooked as they may greatly influence the practicability of your plans.

School yourself not to introduce assumptions into the problem. Do not jump at conclusions. Read and digest every word.

7. Budget your time. Make a simple time schedule for the period of the problem, so arranged as to allot a certain period to each of the various parts into which a problem can be distinctly divided.

8. Do not try to figure out what you think the School wants. Use your own judgment. One of the worst habits you can fall into is that of recalling the solution of some illustrative problem that has been discussed in class and then paralleling that solution in solving the problem at hand. Such procedure will nearly always prove costly with respect to your grades, but of far greater importance is the fact that this practice is so vicious that if persisted in it may vitiate your whole course here. Get a clear picture of the situation, apply the principles you have been taught, make your decision, develop your plan, and then state them fearlessly. Above everything keep in mind the thought, "*I will never equivocate.*"

(From Orientation Lecture by the Director of the Special Class, C&GS School, 13 March, 1939).


BIRDS-EYE VIEW
OF
FORT LEAVENWORTH, KAN.
1881.
Sketched and Lithographed by Wilhelm Dannmeier Asst'r. Eng. & Lith. Top. Asst & Chief Engineer, Dept of the Mo. U. S. Army
Imagined Standpoint about 1¼ miles S.S.W. of Headquarter Hill. one mile above the ground.

(From a sketch made by W. Dannmeier, Topographer, Department of the Missouri.)

# *HISTORY OF THE COMMAND AND GENERAL STAFF SCHOOL*

★ ★ ★

PART II

HEADQUARTERS ARMY OF THE UNITED STATES
WASHINGTON, D. C.

*November 22, 1881.*

MY DEAR SHERIDAN:

I am just in receipt of your letter of the 19th with the tabular list of the officers comprising the new School of Application at Leavenworth.

I need hardly say that I regard it as admirable, and I feel sure that this school will become the best practical military school of all in the United States.

* * * * * * *

I want this new school to start out with the doctrine that service with troops in the field, in time of peace, is the most honorable of all, and the best possible preparation for high command when war does come, as it always does, suddenly.

I don't want to meddle with this new school or to have it the subject of legislation, because if this is done, like West Point, it will be made political and taken out of our control.

The school should form a model post like Gibraltar with duty done as though in actual war, and instruction by books be made secondary to drill, guard duty, and the usual forms of a well regulated garrison.

I want you and General Pope to feel that I am well pleased with all that has been done, and that I have abundant faith in the future.

As ever, your friend,

W. T. SHERMAN.

★

The following organizations had the honor of being the first troops assigned to the new school: Headquarters, Band, and Companies F and H, Twentieth Infantry; Company H, First Infantry; Company A, Fourth Infantry; Company G, Eleventh Infantry; Light Battery F, Second Artillery; Troop B, Third Cavalry; Troop L, Fourth Cavalry; Troop G, Seventh Cavalry; and Troop M, Eighth Cavalry.

The immediate task of organizing the school devolved upon Colonel Elwell S. Otis of the Twentieth Infantry. The five service officers present for duty who, in accordance with the order of establishment were to constitute the school staff, were Majors J. J. Upham and J. S. Poland, the first of the Fifth Cavalry, and the latter of the Eighteenth Cavalry; and Captains E. B. Williston, S. B. M. Young, and J. S. McNaught, of the Second Artillery, Eighth Cavalry, and Twentieth Infantry, respectively.

Colonel Otis estimated that the mission of the new school was to meet "the apparent needs of our service, as manifested by the operations of troops during the past few years, both among civilized communities and in the still uninhabited sections of the country." Although the needs of the school have developed beyond the initial necessities of garrison training which has been assigned to other schools, the spirit of General Sherman's emphasis on instruction by practical application of the principles to be found in books is still continued in the "applicatory system" which forms the basis of instruction at present in the Fort Leavenworth schools.

Under the leadership of Colonel Otis, a "code of regulations" was drawn up and submitted to the War Department which published the following order containing the first program of instruction for the school:

HEADQUARTERS OF THE ARMY
ADJUTANT GENERAL'S OFFICE

WASHINGTON, *January 26, 1882.*

GENERAL ORDERS
No. 8

I. The garrison and detailed officers prescribed in General Orders No. 42, of 1881, from these headquarters, having reached Fort Leavenworth, the School of Application for Cavalry and Infantry is now declared established. Colonel Elwell S. Otis, 20th Infantry, commands the school subject to the supervision of the department and division commanders, and is charged with the practical instruction of every soldier and officer of his command in everything which pertains to army organization, tactics, discipline, equipment, drill, care of men, care of horses, public property, accountability, etc., and generally of everything which is provided for in Army Regulations. These must be his first care and the second is "theoretical instruction," which ought to precede a commission, but is not always the case, *viz.*: reading, writing, grammar, arithmetic, geography, algebra, geometry, and trigonometry sufficient for the measurement and delineation of ground, and such history as every young gentleman should be presumed to know; and third, the "science and practice of war," so far as they can be acquired from books.

II. Under the terms of said general order, and to accomplish the end in view, the General of the Army hereby prescribes the following rules and course of instruction:

The subjects for the schools are the lieutenants belonging to the companies which compose the garrison, and especially detailed from the regiments, making about fifty in all. These will, on reporting, be examined by the staff of the school and divided into two classes, the first only requiring the higher instruction, as defined above, and the second the whole course of two years.

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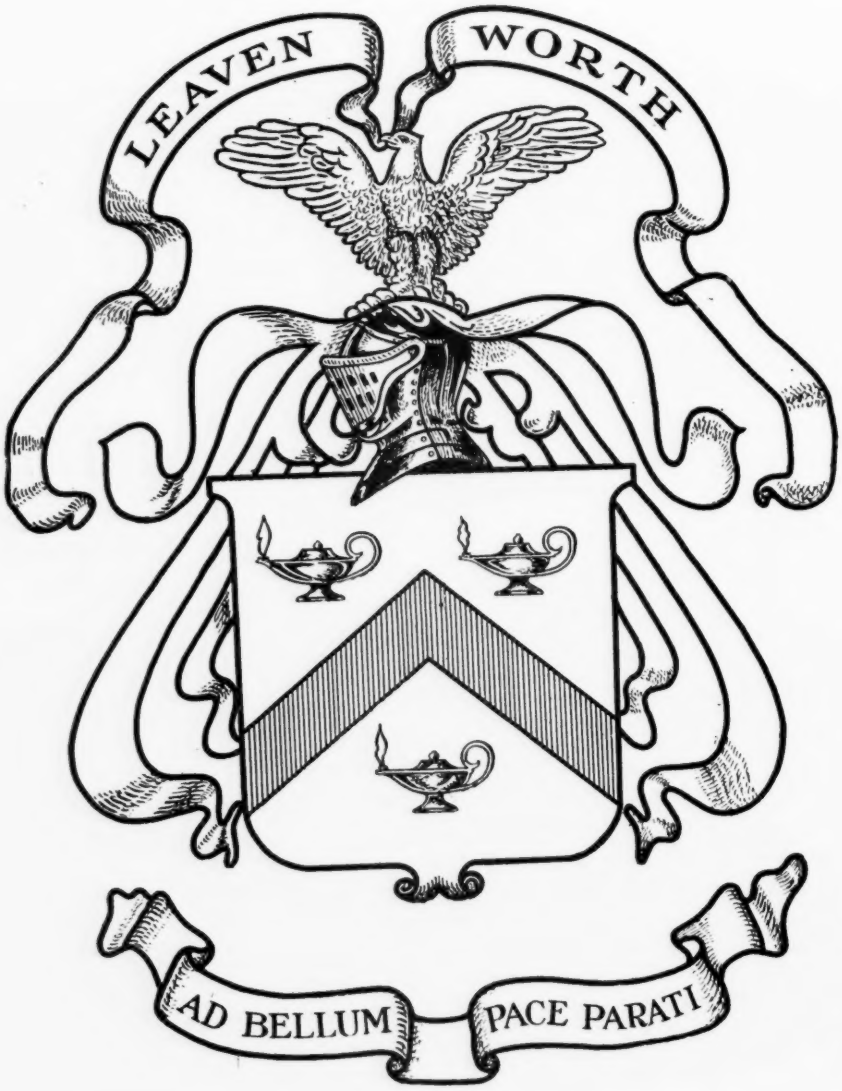
BY COMMAND OF GENERAL SHERMAN:

R. C. DRUM,
*Adjutant General.*

(To be continued)


LEAVEN WORTH
AD BELLUM PACE PARATI